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Analytical Data Package Prepared For

Brown and Caldwell

Yerington Air Quality - Event #78

Radiochemical Analysis By

STL Richland

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code: STLR

Data Package Contains _____ Pages

Report No.: 32530

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31758		000450	J6E250379-1	H57091AG	9H570910	6146431
		000450	J6E250379-1	H57091AA	9H570910	6146436
		000450	J6E250379-1	H57091AE	9H570910	6146439
		000450	J6E250379-1	H57091AF	9H570910	6146441
		000450	J6E250379-1	H57091AC	9H570910	6146445
		000450	J6E250379-1	H57091AD	9H570910	6146452
		000451	J6E250379-2	H571F1AG	9H571F10	6146431
		000451	J6E250379-2	H571F1AA	9H571F10	6146436
		000451	J6E250379-2	H571F1AE	9H571F10	6146439
		000451	J6E250379-2	H571F1AF	9H571F10	6146441
		000451	J6E250379-2	H571F1AC	9H571F10	6146445
		000451	J6E250379-2	H571F1AD	9H571F10	6146452
		000452	J6E250379-3	H571G1AG	9H571G10	6146431
		000452	J6E250379-3	H571G1AA	9H571G10	6146436
		000452	J6E250379-3	H571G1AE	9H571G10	6146439
		000452	J6E250379-3	H571G1AF	9H571G10	6146441
		000452	J6E250379-3	H571G1AC	9H571G10	6146445
		000452	J6E250379-3	H571G1AD	9H571G10	6146452
		000453	J6E250379-4	H571M1AG	9H571M10	6146431
		000453	J6E250379-4	H571M1AA	9H571M10	6146436
		000453	J6E250379-4	H571M1AE	9H571M10	6146439
		000453	J6E250379-4	H571M1AF	9H571M10	6146441
		000453	J6E250379-4	H571M1AC	9H571M10	6146445
		000453	J6E250379-4	H571M1AD	9H571M10	6146452
		000454	J6E250379-5	H571N1AG	9H571N10	6146431
		000454	J6E250379-5	H571N1AA	9H571N10	6146436

Report No.: 32530

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31758		000454	J6E250379-5	H571N1AE	9H571N10	6146439
		000454	J6E250379-5	H571N1AF	9H571N10	6146441
		000454	J6E250379-5	H571N1AC	9H571N10	6146445
		000454	J6E250379-5	H571N1AD	9H571N10	6146452
		000455	J6E250379-6	H571Q1AG	9H571Q10	6146431
		000455	J6E250379-6	H571Q1AA	9H571Q10	6146436
		000455	J6E250379-6	H571Q1AE	9H571Q10	6146439
		000455	J6E250379-6	H571Q1AF	9H571Q10	6146441
		000455	J6E250379-6	H571Q1AC	9H571Q10	6146445
		000455	J6E250379-6	H571Q1AD	9H571Q10	6146452
		000456	J6E250379-7	H571R1AG	9H571R10	6146431
		000456	J6E250379-7	H571R1AA	9H571R10	6146436
		000456	J6E250379-7	H571R1AE	9H571R10	6146439
		000456	J6E250379-7	H571R1AF	9H571R10	6146441
		000456	J6E250379-7	H571R1AC	9H571R10	6146445
		000456	J6E250379-7	H571R1AD	9H571R10	6146452
		000457	J6E250379-8	H571T1AG	9H571T10	6146431
		000457	J6E250379-8	H571T1AA	9H571T10	6146436
		000457	J6E250379-8	H571T1AE	9H571T10	6146439
		000457	J6E250379-8	H571T1AF	9H571T10	6146441
		000457	J6E250379-8	H571T1AC	9H571T10	6146445
		000457	J6E250379-8	H571T1AD	9H571T10	6146452
		P-0621	J6E250379-9	H571V1AG	9H571V10	6146431
		P-0621	J6E250379-9	H571V1AA	9H571V10	6146436
		P-0621	J6E250379-9	H571V1AE	9H571V10	6146439
		P-0621	J6E250379-9	H571V1AF	9H571V10	6146441
		P-0621	J6E250379-9	H571V1AC	9H571V10	6146445
		P-0621	J6E250379-9	H571V1AD	9H571V10	6146452
		P-0622	J6E250379-10	H571X1AG	9H571X10	6146431
		P-0622	J6E250379-10	H571X1AA	9H571X10	6146436
		P-0622	J6E250379-10	H571X1AE	9H571X10	6146439
		P-0622	J6E250379-10	H571X1AF	9H571X10	6146441
		P-0622	J6E250379-10	H571X1AC	9H571X10	6146445
		P-0622	J6E250379-10	H571X1AD	9H571X10	6146452
		P-0623	J6E250379-11	H57101AG	9H571010	6146431
		P-0623	J6E250379-11	H57101AA	9H571010	6146436
		P-0623	J6E250379-11	H57101AE	9H571010	6146439
		P-0623	J6E250379-11	H57101AF	9H571010	6146441
		P-0623	J6E250379-11	H57101AC	9H571010	6146445

Report No.: 32530

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31758		P-0623	J6E250379-11	H57101AD	9H571010	6146452
		P-0624	J6E250379-12	H57111AG	9H571110	6146431
		P-0624	J6E250379-12	H57111AA	9H571110	6146436
		P-0624	J6E250379-12	H57111AE	9H571110	6146439
		P-0624	J6E250379-12	H57111AF	9H571110	6146441
		P-0624	J6E250379-12	H57111AC	9H571110	6146445
		P-0624	J6E250379-12	H57111AD	9H571110	6146452
		P-0625	J6E250379-13	H57121AG	9H571210	6146431
		P-0625	J6E250379-13	H57121AA	9H571210	6146436
		P-0625	J6E250379-13	H57121AE	9H571210	6146439
		P-0625	J6E250379-13	H57121AF	9H571210	6146441
		P-0625	J6E250379-13	H57121AC	9H571210	6146445
		P-0625	J6E250379-13	H57121AD	9H571210	6146452
		P-0626	J6E250379-14	H57131AG	9H571310	6146431
		P-0626	J6E250379-14	H57131AA	9H571310	6146436
		P-0626	J6E250379-14	H57131AE	9H571310	6146439
		P-0626	J6E250379-14	H57131AF	9H571310	6146441
		P-0626	J6E250379-14	H57131AC	9H571310	6146445
		P-0626	J6E250379-14	H57131AD	9H571310	6146452
		P-0627	J6E250379-15	H57141AG	9H571410	6146431
		P-0627	J6E250379-15	H57141AA	9H571410	6146436
		P-0627	J6E250379-15	H57141AE	9H571410	6146439
		P-0627	J6E250379-15	H57141AF	9H571410	6146441
		P-0627	J6E250379-15	H57141AC	9H571410	6146445
		P-0627	J6E250379-15	H57141AD	9H571410	6146452

SEVERN TRENT STL

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www.stl-inc.com

Certificate of Analysis

June 29, 2006

Brown & Caldwell
2701 Prospect Park Drive
Rancho Cordova, CA 95670

Attention: Guy Graening

Date Received at Lab	:	May 25, 2006
Project Name	:	Air Quality Monitoring Yerington Mine
Project Number	:	121243
Event Number	:	78
PO Number	:	129682.001
Sample Type	:	Fifteen (15) Filters
SDG Number	:	31758

CASE NARRATIVE

I. Introduction

On May 25, 2006, fifteen filter samples were received at the STL Richland (STLR) laboratory for radiochemical analysis. Upon receipt, the samples were assigned the STLR identification numbers as described on the cover page of the Analytical Data Package report form. The samples were assigned to Lot Number J6E250379.

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information; analytical results and the appropriate associated statistical uncertainties.

The analysis requested was:

Alpha Spectroscopy
Thorium-228, -230, -232 by method RICH-RC-5087
Uranium-234, -235, -238 by method RICH-RC-5067
Gas Proportional Counters
Gross Alpha by method STL-RICHRC5016/5014
Gross Beta by method STL-RICHRC5016/5014
Radium-228 by method STL RICH-RC-5005
Alpha Scintillation Counter
Radium-226 by method STL RICH-RC-5005

IV. Quality Control

The analytical result for each analysis performed includes a minimum of one laboratory control sample (LCS), and one reagent blank sample analysis. Any exceptions have been noted in the "Comments" section.

V. Comments

Thorium-228, -230, -232:
The LCS, batch blank and sample results are within analytical requirements.

Uranium-234, -235, -238:
The LCS, batch blank and sample results are within analytical requirements.

Gross Alpha Analysis:
The LCS, batch blank and sample results are within analytical requirements.

Gross Beta Analysis:
All of the samples do not meet CRDL. The results of the samples are >MDA>CRDL except 000456. The CRDL is just missed on this sample. Tech notes that something from the hood may have fallen into samples 000450, 000451, P-0623 and P-0624 during the initial leaching process due to heavy rain. Data is accepted. Except as noted, the LCS, batch blank and sample results are within acceptance limits.

Radium-228 Analysis:
The first of the three 50 minute counts of the samples and QC was deleted. The counts and results indicated a short lived isotope, probably Rn-222, was interfering. Because of the shorter count time the MDA of sample 000452 was greater than the CRDL. Except as noted, the LCS, batch blank and sample results are within analytical requirements.

Radium-226 Analysis:
The LCS, batch blank and sample results are within analytical requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Sherryl A. Adam
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**STL Richland's SOP number**
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) ***u_c - Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, *u_c the combined uncertainty*. The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 29-Jun-06

Report No. : 32530

SDG No: 31758

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000450	H57091AG	U-234	0.847 +- 0.609	=	pCi/sample	105%	0.556	
		U-235	0.0788 +- 0.201	ND	pCi/sample	105%	0.472	
		U-238	0.748 +- 0.572	=	pCi/sample	105%	0.556	
000450	H57091AA	TH-228	0.306 +- 0.344	ND	pCi/sample	62%	0.561	
		TH-230	0.264 +- 0.274	ND	pCi/sample	62%	0.388	
		TH-232	0.106 +- 0.151	ND	pCi/sample	62%	0.143	
000450	H57091AE	ALPHA	10.3 +- 6.13	=	pCi/sample	100%	8.32	
000450	H57091AF	BETA	44.4 +- 9.63	=	pCi/sample	100%	6.02	
000450	H57091AC	RA-226	0.293 +- 0.444	ND	pCi/sample	90%	0.766	
000450	H57091AD	RA-228	0.804 +- 1.26	ND	pCi/sample	84%	2.82	
000451	H571F1AG	U-234	0.0998 +- 0.200	ND	pCi/sample	102%	0.27	
		U-235	0.0798 +- 0.204	ND	pCi/sample	102%	0.478	
		U-238	-0.0000332 +- 0.219	ND	pCi/sample	102%	0.734	
000451	H571F1AA	TH-228	-0.0391 +- 0.207	ND	pCi/sample	57%	0.657	
		TH-230	0.222 +- 0.260	ND	pCi/sample	57%	0.201	
		TH-232	0.148 +- 0.211	ND	pCi/sample	57%	0.201	
000451	H571F1AE	ALPHA	7.52 +- 4.91	=	pCi/sample	100%	6.45	
000451	H571F1AF	BETA	33.5 +- 7.06	=	pCi/sample	100%	7.01	
000451	H571F1AC	RA-226	0.0562 +- 0.311	ND	pCi/sample	84%	0.621	
000451	H571F1AD	RA-228	2.16 +- 1.49	ND	pCi/sample	76%	2.97	
000452	H571G1AG	U-234	0.0220 +- 0.237	ND	pCi/sample	87%	0.756	
		U-235	0.176 +- 0.319	ND	pCi/sample	87%	0.622	
		U-238	-0.0880 +- 0.0892	ND	pCi/sample	87%	0.756	
000452	H571G1AA	TH-228	0.228 +- 0.198	=	pCi/sample	86%	0.189	
		TH-230	0.187 +- 0.170	=	pCi/sample	86%	0.101	
		TH-232	0.00000 +- 0.0914	ND	pCi/sample	86%	0.101	
000452	H571G1AE	ALPHA	8.38 +- 5.27	=	pCi/sample	100%	6.71	
000452	H571G1AF	BETA	36.9 +- 7.48	=	pCi/sample	100%	6.75	
000452	H571G1AC	RA-226	-0.3860 +- 0.489	ND	pCi/sample	82%	1.03	
000452	H571G1AD	RA-228	0.951 +- 1.52	ND	pCi/sample	73%	3.4	

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RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 29-Jun-06

Report No. : 32530

SDG No: 31758

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000453	H571M1AG	U-234	0.224 +- 0.364	ND	pCi/sample	93%	0.699	
		U-235	-0.0407 +- 0.0579	ND	pCi/sample	93%	0.575	
		U-238	0.102 +- 0.302	ND	pCi/sample	93%	0.749	
000453	H571M1AA	TH-228	0.0626 +- 0.198	ND	pCi/sample	72%	0.461	
		TH-230	0.178 +- 0.208	ND	pCi/sample	72%	0.161	
		TH-232	0.119 +- 0.169	ND	pCi/sample	72%	0.161	
000453	H571M1AE	ALPHA	10.0 +- 5.49	=	pCi/sample	100%	6.14	
000453	H571M1AF	BETA	44.0 +- 8.32	=	pCi/sample	100%	6.62	
000453	H571M1AC	RA-226	0.162 +- 0.306	ND	pCi/sample	92%	0.55	
000453	H571M1AD	RA-228	0.713 +- 1.13	ND	pCi/sample	84%	2.47	
000454	H571N1AG	U-234	0.189 +- 0.397	ND	pCi/sample	97%	0.876	
		U-235	0.264 +- 0.332	ND	pCi/sample	97%	0.452	
		U-238	0.208 +- 0.337	ND	pCi/sample	97%	0.648	
000454	H571N1AA	TH-228	0.0621 +- 0.249	ND	pCi/sample	76%	0.577	
		TH-230	0.383 +- 0.325	=	pCi/sample	76%	0.353	
		TH-232	0.0589 +- 0.118	ND	pCi/sample	76%	0.16	
000454	H571N1AE	ALPHA	7.61 +- 4.80	=	pCi/sample	100%	5.54	
000454	H571N1AF	BETA	30.1 +- 6.46	=	pCi/sample	100%	6.61	
000454	H571N1AC	RA-226	0.219 +- 0.356	ND	pCi/sample	86%	0.623	
000454	H571N1AD	RA-228	2.63 +- 1.37	=	pCi/sample	79%	2.47	
000455	H571Q1AG	U-234	0.00000 +- 0.245	ND	pCi/sample	96%	0.271	
		U-235	0.0600 +- 0.208	ND	pCi/sample	96%	0.565	
		U-238	-0.0200 +- 0.0402	ND	pCi/sample	96%	0.479	
000455	H571Q1AA	TH-228	0.0972 +- 0.252	ND	pCi/sample	60%	0.545	
		TH-230	0.184 +- 0.216	ND	pCi/sample	60%	0.166	
		TH-232	-0.0307 +- 0.0617	ND	pCi/sample	60%	0.368	
000455	H571Q1AE	ALPHA	5.89 +- 4.96	ND	pCi/sample	100%	8.28	
000455	H571Q1AF	BETA	39.6 +- 7.55	=	pCi/sample	100%	6.34	
000455	H571Q1AC	RA-226	-0.0909 +- 0.422	ND	pCi/sample	91%	0.893	
000455	H571Q1AD	RA-228	1.88 +- 1.32	ND	pCi/sample	82%	2.62	

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RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 29-Jun-06

Report No. : 32530

SDG No: 31758

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000456	H571R1AG	U-234	0.219 +- 0.311	ND	pCi/sample	91%	0.296	
		U-235	0.00000 +- 0.268	ND	pCi/sample	91%	0.296	
		U-238	0.0875 +- 0.224	ND	pCi/sample	91%	0.524	
000456	H571R1AA	TH-228	0.00000169 +- 0.176	ND	pCi/sample	76%	0.472	
		TH-230	0.120 +- 0.175	ND	pCi/sample	76%	0.289	
		TH-232	0.00000 +- 0.118	ND	pCi/sample	76%	0.13	
000456	H571R1AE	ALPHA	-0.5380 +- 2.10	ND	pCi/sample	100%	6.46	
000456	H571R1AF	BETA	1.84 +- 2.94	ND	pCi/sample	100%	6.22	
000456	H571R1AC	RA-226	0.299 +- 0.441	ND	pCi/sample	101%	0.757	
000456	H571R1AD	RA-228	0.834 +- 0.922	ND	pCi/sample	88%	1.97	
000457	H571T1AG	U-234	0.0377 +- 0.200	ND	pCi/sample	98%	0.595	
		U-235	-0.0189 +- 0.0379	ND	pCi/sample	98%	0.452	
		U-238	0.00000 +- 0.231	ND	pCi/sample	98%	0.256	
000457	H571T1AA	TH-228	0.0508 +- 0.227	ND	pCi/sample	44%	0.609	
		TH-230	0.337 +- 0.403	ND	pCi/sample	44%	0.577	
		TH-232	0.0481 +- 0.215	ND	pCi/sample	44%	0.577	
000457	H571T1AE	ALPHA	0.00000 +- 2.44	ND	pCi/sample	100%	6.69	
000457	H571T1AF	BETA	1.68 +- 2.58	ND	pCi/sample	100%	5.42	
000457	H571T1AC	RA-226	0.300 +- 0.367	ND	pCi/sample	99%	0.602	
000457	H571T1AD	RA-228	2.35 +- 1.14	=	pCi/sample	86%	1.82	
P-0621	H571V1AG	U-234	0.189 +- 0.301	ND	pCi/sample	94%	0.503	
		U-235	0.00000 +- 0.257	ND	pCi/sample	94%	0.284	
		U-238	0.105 +- 0.211	ND	pCi/sample	94%	0.284	
P-0621	H571V1AA	TH-228	0.0814 +- 0.163	ND	pCi/sample	85%	0.325	
		TH-230	0.257 +- 0.235	=	pCi/sample	85%	0.139	
		TH-232	-0.0257 +- 0.0516	ND	pCi/sample	85%	0.308	
P-0621	H571V1AE	ALPHA	4.22 +- 3.78	ND	pCi/sample	100%	6.07	
P-0621	H571V1AF	BETA	28.1 +- 6.00	=	pCi/sample	100%	6.19	
P-0621	H571V1AC	RA-226	0.172 +- 0.434	ND	pCi/sample	96%	0.784	
P-0621	H571V1AD	RA-228	2.10 +- 1.10	=	pCi/sample	88%	1.86	

STL Richland

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RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 29-Jun-06

Report No. : 32530

SDG No: 31758

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
P-0622	H571X1AG	U-234	0.160 +- 0.289	ND	pCi/sample	100%	0.564	
		U-235	0.0799 +- 0.204	ND	pCi/sample	100%	0.478	
		U-238	-0.0399 +- 0.0568	ND	pCi/sample	100%	0.564	
P-0622	H571X1AA	TH-228	0.00000103 +- 0.152	ND	pCi/sample	63%	0.456	
		TH-230	0.235 +- 0.279	ND	pCi/sample	63%	0.432	
		TH-232	0.0586 +- 0.118	ND	pCi/sample	63%	0.159	
P-0622	H571X1AE	ALPHA	6.62 +- 4.55	=	pCi/sample	100%	5.66	
P-0622	H571X1AF	BETA	26.9 +- 5.90	=	pCi/sample	100%	6.19	
P-0622	H571X1AC	RA-226	0.0334 +- 0.337	ND	pCi/sample	87%	0.674	
P-0622	H571X1AD	RA-228	0.687 +- 0.952	ND	pCi/sample	79%	2.11	
P-0623	H57101AG	U-234	9.87 +- 2.86	=	pCi/sample	65%	0.779	
		U-235	0.248 +- 0.396	ND	pCi/sample	65%	0.66	
		U-238	4.52 +- 1.76	=	pCi/sample	65%	0.66	
P-0623	H57101AA	TH-228	1.31 +- 0.613	=	pCi/sample	70%	0.418	
		TH-230	1.64 +- 0.675	=	pCi/sample	70%	0.323	
		TH-232	0.996 +- 0.507	=	pCi/sample	70%	0.323	
P-0623	H57101AE	ALPHA	71.0 +- 20.3	=	pCi/sample	100%	9.57	
P-0623	H57101AF	BETA	155.0 +- 23.5	=	pCi/sample	100%	6.44	
P-0623	H57101AC	RA-226	1.30 +- 0.521	=	pCi/sample	94%	0.43	
P-0623	H57101AD	RA-228	6.86 +- 1.84	=	pCi/sample	84%	1.76	
P-0624	H57111AG	U-234	0.0796 +- 0.203	ND	pCi/sample	98%	0.477	
		U-235	0.00000 +- 0.244	ND	pCi/sample	98%	0.27	
		U-238	0.0995 +- 0.200	ND	pCi/sample	98%	0.27	
P-0624	H57111AA	TH-228	0.0669 +- 0.134	ND	pCi/sample	65%	0.181	
		TH-230	0.190 +- 0.222	ND	pCi/sample	65%	0.172	
		TH-232	-0.0317 +- 0.0636	ND	pCi/sample	65%	0.38	
P-0624	H57111AE	ALPHA	5.32 +- 4.24	ND	pCi/sample	100%	6.39	
P-0624	H57111AF	BETA	33.5 +- 7.32	=	pCi/sample	100%	6.23	
P-0624	H57111AC	RA-226	0.836 +- 0.560	=	pCi/sample	80%	0.738	
P-0624	H57111AD	RA-228	2.94 +- 1.36	=	pCi/sample	73%	2.18	

STL Richland

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RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 29-Jun-06

Report No. : 32530

SDG No: 31758

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
P-0625	H57121AG	U-234	0.0743 +- 0.222	ND	pCi/sample	88%	0.584	
		U-235	-0.0175 +- 0.0249	ND	pCi/sample	88%	0.5	
		U-238	0.0481 +- 0.224	ND	pCi/sample	88%	0.677	
P-0625	H57121AA	TH-228	0.0448 +- 0.0900	ND	pCi/sample	81%	0.121	
		TH-230	0.340 +- 0.248	=	pCi/sample	81%	0.115	
		TH-232	0.0425 +- 0.0853	ND	pCi/sample	81%	0.115	
P-0625	H57121AE	ALPHA	6.67 +- 4.77	ND	pCi/sample	100%	6.68	
P-0625	H57121AF	BETA	34.8 +- 7.77	=	pCi/sample	100%	6.72	
P-0625	H57121AC	RA-226	0.109 +- 0.476	ND	pCi/sample	78%	0.889	
P-0625	H57121AD	RA-228	5.54 +- 1.86	=	pCi/sample	67%	2.41	
P-0626	H57131AG	U-234	-0.0475 +- 0.0432	ND	pCi/sample	87%	0.671	
		U-235	-0.0190 +- 0.0271	ND	pCi/sample	87%	0.543	
		U-238	-0.0380 +- 0.0385	ND	pCi/sample	87%	0.634	
P-0626	H57131AA	TH-228	0.289 +- 0.285	ND	pCi/sample	94%	0.444	
		TH-230	0.332 +- 0.245	=	pCi/sample	94%	0.234	
		TH-232	-0.0195 +- 0.0392	ND	pCi/sample	94%	0.234	
P-0626	H57131AE	ALPHA	5.30 +- 4.13	ND	pCi/sample	100%	6.11	
P-0626	H57131AF	BETA	25.9 +- 5.88	=	pCi/sample	100%	6.46	
P-0626	H57131AC	RA-226	0.0157 +- 0.237	ND	pCi/sample	96%	0.485	
P-0626	H57131AD	RA-228	4.18 +- 1.41	=	pCi/sample	86%	1.79	
P-0627	H57141AG	U-234	-0.0193 +- 0.0275	ND	pCi/sample	86%	0.552	
		U-235	-0.0193 +- 0.0275	ND	pCi/sample	86%	0.552	
		U-238	0.00000 +- 0.296	ND	pCi/sample	86%	0.327	
P-0627	H57141AA	TH-228	0.00000162 +- 0.168	ND	pCi/sample	78%	0.451	
		TH-230	0.115 +- 0.167	ND	pCi/sample	78%	0.276	
		TH-232	0.00000 +- 0.113	ND	pCi/sample	78%	0.125	
P-0627	H57141AE	ALPHA	2.58 +- 3.11	ND	pCi/sample	100%	5.55	
P-0627	H57141AF	BETA	26.4 +- 6.33	=	pCi/sample	100%	5.98	
P-0627	H57141AC	RA-226	0.231 +- 0.332	ND	pCi/sample	90%	0.566	
P-0627	H57141AD	RA-228	7.00 +- 1.94	=	pCi/sample	83%	2.21	

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RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 29-Jun-06

Report No. : 32530

SDG No: 31758

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2

Number of Results: 150

STL Richland RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

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QC Results Summary
STL Richland STLR

Ordered by QC Type, Batch No.

Date: 29-Jun-06

Report No. : 32530

SDG No.: 31758

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
BLANK QC	H6AT01AA	U-234	0.0139 +- 0.0249	N	pCi/sample	101%			0.0492
		U-235	0.00802 +- 0.0175	N	pCi/sample	101%			0.0351
		U-238	0.00000 +- 0.0213	N	pCi/sample	101%			0.0236
BLANK QC	H6AW11AA	TH-228	0.00665 +- 0.0134	N	pCi/sample	85%			0.0266
		TH-230	0.0231 +- 0.0214	N	pCi/sample	85%			0.0252
		TH-232	-0.0021 +- 0.00422	N	pCi/sample	85%			0.0252
BLANK QC	H6AXH1AA	ALPHA	-0.00228 +- 0.0661	N	pCi/sample	100%			0.173
BLANK QC	H6A001AA	BETA	-0.0588 +- 0.245	N	pCi/sample	100%			0.556
BLANK QC	H6A1V1AA	RA-226	0.0247 +- 0.0937	N	pCi/sample	86%			0.176
BLANK QC	H6A3J1AA	RA-228	0.395 +- 0.279	N	pCi/sample	77%			0.535
LCS	H6AT01AC	U-234	1.04 +- 0.238	=	pCi/sample	93%	107%	0.1	0.0401
		U-238	0.902 +- 0.214	=	pCi/sample	93%	89%	-0.1	0.0192
LCS	H6AW11AC	TH-230	1.87 +- 0.391	=	pCi/sample	76%	103%	0.0	0.0288
LCS	H6AXH1AC	ALPHA	2.07 +- 0.523	=	pCi/sample	100%	87%	-0.1	0.135
LCS	H6A001AC	BETA	4.21 +- 0.736	=	pCi/sample	100%	92%	-0.1	0.516
LCS	H6A1V1AC	RA-226	1.36 +- 0.353	=	pCi/sample	93%	96%	0.0	0.116
LCS	H6A3J1AC	RA-228	4.91 +- 0.925	=	pCi/sample	84%	96%	0.0	0.478

Number of Results: 17

STL Richland

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Bias - (Result/Expected)-1 as defined by ANSI N13.30.

= ERPIMS - Equal To, Analyte Detected

ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland | **SDG:** 31758 | **Collection Date:** 5/10/2006 10:20:00 AM

Lot-Sample No.: J6E250379-1 | **Report No. :** 32530 | **Received Date:** 5/25/2006 10:00:00 AM

Client Sample ID: 000450 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H57091AG			**Report DB ID:** 9H570910								
U-234	**0.847**	=	0.59	0.61	0.556	pCi/sample	105%	*(1.5)*	6/29/06 12:34 a	1.0	0.0625	E908.0
						0.145	1.0	*(2.8)*		Sample	Sample	ALP1
U-235	**0.0788**	ND	0.20	0.20	0.472	pCi/sample	105%	*0.17*	6/29/06 12:34 a	1.0	0.0625	E908.0
						0.102	1.0	*0.78*		Sample	Sample	ALP1
U-238	**0.748**	=	0.56	0.57	0.556	pCi/sample	105%	*(1.3)*	6/29/06 12:34 a	1.0	0.0625	E908.0
						0.145	1.0	*(2.6)*		Sample	Sample	ALP1
								Ratio U-234/238 = 1.1				
Batch: 6146436	**Work Order:** H57091AA			**Report DB ID:** 9H570910								
TH-228	**0.306**	ND	0.34	0.34	0.561	pCi/sample	62%	*0.55*	6/28/06 01:29 a	1.0	0.08386	ISOTH
						0.205	1.0	*(1.8)*		Sample	Sample	ALP114
TH-230	**0.264**	ND	0.27	0.27	0.388	pCi/sample	62%	*0.68*	6/28/06 01:29 a	1.0	0.08386	ISOTH
						0.123	1.0	*(1.9)*		Sample	Sample	ALP114
TH-232	**0.106**	ND	0.15	0.15	0.143	pCi/sample	62%	*0.74*	6/28/06 01:29 a	1.0	0.08386	ISOTH
							1.0	*(1.4)*		Sample	Sample	ALP114
Batch: 6146439	**Work Order:** H57091AE			**Report DB ID:** 9H570910								
ALPHA	**10.3**	=	5.7	6.1	8.32	pCi/sample	100%	*(1.2)*	6/21/06 09:37 a	1.0	0.02093	E900.0
						3.42	20.0	*(3.4)*		Sample	Sample	GPC10A
Batch: 6146441	**Work Order:** H57091AF			**Report DB ID:** 9H570910								
BETA	**44.4**	=	5.4	9.6	6.02	pCi/sample	100%	*(7.4)*	6/20/06 02:03 p	1.0	0.08346	E900.0
						2.85	5.0	*(9.2)*		Sample	Sample	GPC32C
Batch: 6146445	**Work Order:** H57091AC			**Report DB ID:** 9H570910								

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland **SDG:** 31758 **Collection Date:** 5/10/2006 10:20:00 AM

Lot-Sample No.: J6E250379-1 **Report No. :** 32530 **Received Date:** 5/25/2006 10:00:00 AM

Client Sample ID: 000450 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	**0.293**	ND	0.44	0.44	0.766	pCi/sample	90%	*0.38*	6/24/06 01:25 p	1.0	0.25036	E903.1
						0.337	1.0	*(1.3)*		Sample	Sample	ASC1HB
Batch: 6146452	**Work Order:** H57091AD			**Report DB ID:** 9H570910								
RA-228	**0.804**	ND	1.2	1.3	2.82	pCi/sample	84%	*0.29*	6/27/06 06:50 a	1.0	0.25036	E904.0
						1.29	3.1	*(1.3)*		Sample	Sample	GPC7A

Number of Results: 10

Comments:

STL Richland
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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name:	STL Richland	**SDG:**	31758	**Collection Date:**	5/10/2006 10:35:00 AM
Lot-Sample No.:	J6E250379-2	**Report No. :**	32530	**Received Date:**	5/25/2006 10:00:00 AM
Client Sample ID:	000451	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H571F1AG			**Report DB ID:** 9H571F10								
U-234	0.0998	ND	0.20	0.20	0.27	pCi/sample	102%	*0.37*	6/29/06 12:34 a	1.0	0.06232	E908.0
							1.0	*1.*		Sample	Sample	ALP2
U-235	0.0798	ND	0.20	0.20	0.478	pCi/sample	102%	*0.17*	6/29/06 12:34 a	1.0	0.06232	E908.0
						0.104	1.0	*0.78*		Sample	Sample	ALP2
U-238	-0.0000332	ND	0.22	0.22	0.734	pCi/sample	102%	*0.*	6/29/06 12:34 a	1.0	0.06232	E908.0
						0.232	1.0	*0.*		Sample	Sample	ALP2
								Ratio U-234/238 = -3000.5				
Batch: 6146436	**Work Order:** H571F1AA			**Report DB ID:** 9H571F10								
TH-228	-0.0391	ND	0.21	0.21	0.657	pCi/sample	57%	*-0.06*	6/28/06 01:29 a	1.0	0.083	ISOTH
						0.223	1.0	*-0.38*		Sample	Sample	ALP116
TH-230	0.222	ND	0.26	0.26	0.201	pCi/sample	57%	*(1.1)*	6/28/06 01:29 a	1.0	0.083	ISOTH
							1.0	*(1.7)*		Sample	Sample	ALP116
TH-232	0.148	ND	0.21	0.21	0.201	pCi/sample	57%	*0.74*	6/28/06 01:29 a	1.0	0.083	ISOTH
							1.0	*(1.4)*		Sample	Sample	ALP116
Batch: 6146439	**Work Order:** H571F1AE			**Report DB ID:** 9H571F10								
ALPHA	7.52	=	4.7	4.9	6.45	pCi/sample	100%	*(1.2)*	6/21/06 09:37 a	1.0	0.02087	E900.0
						2.5	20.0	*(3.1)*		Sample	Sample	GPC10B
Batch: 6146441	**Work Order:** H571F1AF			**Report DB ID:** 9H571F10								
BETA	33.5	=	5.2	7.1	7.01	pCi/sample	100%	*(4.8)*	6/20/06 02:03 p	1.0	0.08334	E900.0
						3.34	5.0	*(9.5)*		Sample	Sample	GPC32D
Batch: 6146445	**Work Order:** H571F1AC			**Report DB ID:** 9H571F10								

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
SDG: 31758
Collection Date: 5/10/2006 10:35:00 AM
Lot-Sample No.: J6E250379-2
Report No. : 32530
Received Date: 5/25/2006 10:00:00 AM
Client Sample ID: 000451
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.0562	ND	0.31	0.31	0.621	pCi/sample	84%	*0.09*	6/24/06 01:24 p	1.0	0.24904	E903.1
						0.253	1.0	*0.36*		Sample	Sample	ASC2RC
Batch: 6146452	**Work Order:** H571F1AD			**Report DB ID:** 9H571F10								
RA-228	2.16	ND	1.4	1.5	2.97	pCi/sample	76%	*0.73*	6/27/06 06:50 a	1.0	0.24904	E904.0
						1.35	3.1	*(2.9)*		Sample	Sample	GPC7B

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name:	**STL Richland**	**SDG:**	31758	**Collection Date:**	5/10/2006 10:50:00 AM
Lot-Sample No.:	**J6E250379-3**	**Report No. :**	32530	**Received Date:**	5/25/2006 10:00:00 AM
Client Sample ID:	**000452**	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H571G1AG			**Report DB ID:** 9H571G10								
U-234	**0.0220**	ND	0.24	0.24	0.756	pCi/sample	87%	*0.03*	6/29/06 12:34 a	1.0	0.06244	E908.0
						0.229	1.0	*0.19*		Sample	Sample	ALP3
U-235	**0.176**	ND	0.32	0.32	0.622	pCi/sample	87%	*0.28*	6/29/06 12:34 a	1.0	0.06244	E908.0
						0.162	1.0	*(1.1)*		Sample	Sample	ALP3
U-238	**-0.0880**	ND	0.088	0.089	0.756	pCi/sample	87%	*-0.12*	6/29/06 12:34 a	1.0	0.06244	E908.0
						0.229	1.0	*-(2.)*		Sample	Sample	ALP3
								Ratio U-234/238 = -0.2				
Batch: 6146436	**Work Order:** H571G1AA			**Report DB ID:** 9H571G10								
TH-228	**0.228**	=	0.19	0.20	0.189	pCi/sample	86%	*(1.2)*	6/28/06 01:29 a	1.0	0.08313	ISOTH
						0.041	1.0	*(2.3)*		Sample	Sample	ALP117
TH-230	**0.187**	=	0.17	0.17	0.101	pCi/sample	86%	*(1.8)*	6/28/06 01:29 a	1.0	0.08313	ISOTH
							1.0	*(2.2)*		Sample	Sample	ALP117
TH-232	**0.00000**	ND	0.0000	0.091	0.101	pCi/sample	86%	*0.*	6/28/06 01:29 a	1.0	0.08313	ISOTH
							1.0	*0.*		Sample	Sample	ALP117
Batch: 6146439	**Work Order:** H571G1AE			**Report DB ID:** 9H571G10								
ALPHA	**8.38**	=	5.0	5.3	6.71	pCi/sample	100%	*(1.2)*	6/21/06 09:37 a	1.0	0.02077	E900.0
						2.6	20.0	*(3.2)*		Sample	Sample	GPC10C
Batch: 6146441	**Work Order:** H571G1AF			**Report DB ID:** 9H571G10								
BETA	**36.9**	=	5.2	7.5	6.75	pCi/sample	100%	*(5.5)*	6/20/06 04:02 p	1.0	0.08321	E900.0
						3.22	5.0	*(9.9)*		Sample	Sample	GPC26A
Batch: 6146445	**Work Order:** H571G1AC			**Report DB ID:** 9H571G10								

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
SDG: 31758
Collection Date: 5/10/2006 10:50:00 AM
Lot-Sample No.: J6E250379-3
Report No. : 32530
Received Date: 5/25/2006 10:00:00 AM
Client Sample ID: 000452
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	-0.3860	ND	0.48	0.49	1.03	pCi/sample	82%	*-0.38*	6/24/06 01:25 p	1.0	0.2509	E903.1
						0.463	1.0	*-(1.6)*		Sample	Sample	ASC3HA
Batch: 6146452	**Work Order:** H571G1AD			**Report DB ID:** 9H571G10								
RA-228	0.951	ND	1.4	1.5	3.4	pCi/sample	73%	*0.28*	6/27/06 06:50 a	1.0	0.2509	E904.0
						1.56	3.1	*(1.2)*		Sample	Sample	GPC7C

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland | **SDG:** 31758 | **Collection Date:** 5/10/2006 11:25:00 AM

Lot-Sample No.: J6E250379-4 | **Report No. :** 32530 | **Received Date:** 5/25/2006 10:00:00 AM

Client Sample ID: 000453 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H571M1AG			**Report DB ID:** 9H571M10								
U-234	**0.224**	ND	0.36	0.36	0.699	pCi/sample	93%	*0.32*	6/29/06 12:35 a	1.0	0.06262	E908.0
						0.212	1.0	*(1.2)*		Sample	Sample	ALP4
U-235	**-0.0407**	ND	0.058	0.058	0.575	pCi/sample	93%	*-0.07*	6/29/06 12:35 a	1.0	0.06262	E908.0
						0.15	1.0	*-(1.4)*		Sample	Sample	ALP4
U-238	**0.102**	ND	0.30	0.30	0.749	pCi/sample	93%	*0.14*	6/29/06 12:35 a	1.0	0.06262	E908.0
						0.237	1.0	*0.67*		Sample	Sample	ALP4
								Ratio U-234/238 = 2.2				
Batch: 6146436	**Work Order:** H571M1AA			**Report DB ID:** 9H571M10								
TH-228	**0.0626**	ND	0.20	0.20	0.461	pCi/sample	72%	*0.14*	6/28/06 01:29 a	1.0	0.0838	ISOTH
						0.146	1.0	*0.63*		Sample	Sample	ALP119
TH-230	**0.178**	ND	0.21	0.21	0.161	pCi/sample	72%	*(1.1)*	6/28/06 01:29 a	1.0	0.0838	ISOTH
							1.0	*(1.7)*		Sample	Sample	ALP119
TH-232	**0.119**	ND	0.17	0.17	0.161	pCi/sample	72%	*0.74*	6/28/06 01:29 a	1.0	0.0838	ISOTH
							1.0	*(1.4)*		Sample	Sample	ALP119
Batch: 6146439	**Work Order:** H571M1AE			**Report DB ID:** 9H571M10								
ALPHA	**10.0**	=	5.1	5.5	6.14	pCi/sample	100%	*(1.6)*	6/21/06 09:37 a	1.0	0.02088	E900.0
						2.37	20.0	*(3.7)*		Sample	Sample	GPC10D
Batch: 6146441	**Work Order:** H571M1AF			**Report DB ID:** 9H571M10								
BETA	**44.0**	=	5.5	8.3	6.62	pCi/sample	100%	*(6.7)*	6/20/06 04:02 p	1.0	0.08324	E900.0
						3.14	5.0	*(10.6)*		Sample	Sample	GPC26B
Batch: 6146445	**Work Order:** H571M1AC			**Report DB ID:** 9H571M10								

STL Richland
rptSTLRchSample
V4.15.0 A97

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FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland **SDG:** 31758 **Collection Date:** 5/10/2006 11:25:00 AM

Lot-Sample No.: J6E250379-4 **Report No. :** 32530 **Received Date:** 5/25/2006 10:00:00 AM

Client Sample ID: 000453 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.162	ND	0.30	0.31	0.55	pCi/sample	92%	*0.29*	6/24/06 01:26 p	1.0	0.25113	E903.1
						0.224	1.0	*(1.1)*		Sample	Sample	ASC4UA
Batch: 6146452	**Work Order:** H571M1AD			**Report DB ID:** 9H571M10								
RA-228	0.713	ND	0.98	1.1	2.47	pCi/sample	84%	*0.29*	6/27/06 06:50 a	1.0	0.25113	E904.0
						1.12	3.1	*(1.3)*		Sample	Sample	GPC1A

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E250379-5
Client Sample ID: 000454
Yerington Air Quality - Event #78

SDG: 31758
Report No. : 32530
COC No. :

Collection Date: 5/10/2006 12:05:00 PM
Received Date: 5/25/2006 10:00:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H571N1AG			**Report DB ID:** 9H571N10								
U-234	**0.189**	ND	0.40	0.40	0.876	pCi/sample	97%	*0.22*	6/29/06 12:35 a	1.0	0.06272	E908.0
						0.31	1.0	*0.95*		Sample	Sample	ALP5
U-235	**0.264**	ND	0.33	0.33	0.452	pCi/sample	97%	*0.58*	6/29/06 12:35 a	1.0	0.06272	E908.0
						0.0981	1.0	*(1.6)*		Sample	Sample	ALP5
U-238	**0.208**	ND	0.34	0.34	0.648	pCi/sample	97%	*0.32*	6/29/06 12:35 a	1.0	0.06272	E908.0
						0.196	1.0	*(1.2)*		Sample	Sample	ALP5
								Ratio U-234/238 = 0.9				
Batch: 6146436	**Work Order:** H571N1AA			**Report DB ID:** 9H571N10								
TH-228	**0.0621**	ND	0.25	0.25	0.577	pCi/sample	76%	*0.11*	6/28/06 01:29 a	1.0	0.0833	ISOTH
						0.204	1.0	*0.5*		Sample	Sample	ALP120
TH-230	**0.383**	=	0.32	0.33	0.353	pCi/sample	76%	*(1.1)*	6/28/06 01:29 a	1.0	0.0833	ISOTH
						0.0968	1.0	*(2.4)*		Sample	Sample	ALP120
TH-232	**0.0589**	ND	0.12	0.12	0.16	pCi/sample	76%	*0.37*	6/28/06 01:29 a	1.0	0.0833	ISOTH
							1.0	*1.*		Sample	Sample	ALP120
Batch: 6146439	**Work Order:** H571N1AE			**Report DB ID:** 9H571N10								
ALPHA	**7.61**	=	4.5	4.8	5.54	pCi/sample	100%	*(1.4)*	6/21/06 09:37 a	1.0	0.02088	E900.0
						2.02	20.0	*(3.2)*		Sample	Sample	GPC10E
Batch: 6146441	**Work Order:** H571N1AF			**Report DB ID:** 9H571N10								
BETA	**30.1**	=	4.9	6.5	6.61	pCi/sample	100%	*(4.6)*	6/20/06 04:02 p	1.0	0.08355	E900.0
						3.13	5.0	*(9.3)*		Sample	Sample	GPC26C
Batch: 6146445	**Work Order:** H571N1AC			**Report DB ID:** 9H571N10								

STL Richland
rptSTLRchSample
V4.15.0 A97

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FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E250379-5
Client Sample ID: 000454
Yerington Air Quality - Event #78

SDG: 31758
Report No. : 32530
COC No. :

Collection Date: 5/10/2006 12:05:00 PM
Received Date: 5/25/2006 10:00:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.219	ND	0.35	0.36	0.623	pCi/sample	86%	*0.35*	6/24/06 01:24 p	1.0	0.25242	E903.1
						0.259	1.0	*(1.2)*		Sample	Sample	ASC7UA
Batch: 6146452	**Work Order:** H571N1AD			**Report DB ID:** 9H571N10								
RA-228	2.63	=	1.3	1.4	2.47	pCi/sample	79%	*(1.1)*	6/27/06 06:50 a	1.0	0.25242	E904.0
						1.11	3.1	*(3.8)*		Sample	Sample	GPC1C

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

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FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland | **SDG:** 31758 | **Collection Date:** 5/10/2006 12:20:00 PM

Lot-Sample No.: J6E250379-6 | **Report No. :** 32530 | **Received Date:** 5/25/2006 10:00:00 AM

Client Sample ID: 000455 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H571Q1AG			**Report DB ID:** 9H571Q10								
U-234	0.00000	ND	0.0000	0.24	0.271	pCi/sample	96%	*0.*	6/29/06 12:35 a	1.0	0.06232	E908.0
							1.0	*0.*		Sample	Sample	ALP6
U-235	0.0600	ND	0.21	0.21	0.565	pCi/sample	96%	*0.11*	6/29/06 12:35 a	1.0	0.06232	E908.0
						0.147	1.0	*0.58*		Sample	Sample	ALP6
U-238	-0.0200	ND	0.040	0.040	0.479	pCi/sample	96%	*-0.04*	6/29/06 12:35 a	1.0	0.06232	E908.0
						0.104	1.0	*-1.*		Sample	Sample	ALP6
Batch: 6146436	**Work Order:** H571Q1AA			**Report DB ID:** 9H571Q10								
TH-228	0.0972	ND	0.25	0.25	0.545	pCi/sample	60%	*0.18*	6/28/06 03:43 a	1.0	0.08366	ISOTH
						0.185	1.0	*0.77*		Sample	Sample	ALP171
TH-230	0.184	ND	0.21	0.22	0.166	pCi/sample	60%	*(1.1)*	6/28/06 03:43 a	1.0	0.08366	ISOTH
							1.0	*(1.7)*		Sample	Sample	ALP171
TH-232	-0.0307	ND	0.061	0.062	0.368	pCi/sample	60%	*-0.08*	6/28/06 03:43 a	1.0	0.08366	ISOTH
						0.101	1.0	*-1.*		Sample	Sample	ALP171
Batch: 6146439	**Work Order:** H571Q1AE			**Report DB ID:** 9H571Q10								
ALPHA	5.89	ND	4.8	5.0	8.28	pCi/sample	100%	*0.71*	6/21/06 11:30 a	1.0	0.02091	E900.0
						3.4	20.0	*(2.4)*		Sample	Sample	GPC10A
Batch: 6146441	**Work Order:** H571Q1AF			**Report DB ID:** 9H571Q10								
BETA	39.6	=	5.3	7.6	6.34	pCi/sample	100%	*(6.2)*	6/20/06 04:02 p	1.0	0.08357	E900.0
						3.0	5.0	*(10.5)*		Sample	Sample	GPC26D
Batch: 6146445	**Work Order:** H571Q1AC			**Report DB ID:** 9H571Q10								

STL Richland
rptSTLRchSample
V4.15.0 A97

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ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
SDG: 31758
Collection Date: 5/10/2006 12:20:00 PM
Lot-Sample No.: J6E250379-6
Report No. : 32530
Received Date: 5/25/2006 10:00:00 AM
Client Sample ID: 000455
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	-0.0909	ND	0.42	0.42	0.893	pCi/sample	91%	*-0.1*	6/24/06 01:26 p	1.0	0.25026	E903.1
						0.38	1.0	*-0.43*		Sample	Sample	ASC8RD
Batch: 6146452	**Work Order:** H571Q1AD			**Report DB ID:** 9H571Q10								
RA-228	1.88	ND	1.3	1.3	2.62	pCi/sample	82%	*0.72*	6/27/06 06:50 a	1.0	0.25026	E904.0
						1.19	3.1	*(2.9)*		Sample	Sample	GPC1D

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland | **SDG:** 31758 | **Collection Date:** 5/10/2006 12:25:00 PM

Lot-Sample No.: J6E250379-7 | **Report No. :** 32530 | **Received Date:** 5/25/2006 10:00:00 AM

Client Sample ID: 000456 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H571R1AG			**Report DB ID:** 9H571R10								
U-234	0.219	ND	0.31	0.31	0.296	pCi/sample	91%	*0.74*	6/29/06 12:35 a	1.0	0.06201	E908.0
							1.0	*(1.4)*		Sample	Sample	ALP7
U-235	0.00000	ND	0.0000	0.27	0.296	pCi/sample	91%	*0.*	6/29/06 12:35 a	1.0	0.06201	E908.0
							1.0	*0.*		Sample	Sample	ALP7
U-238	0.0875	ND	0.22	0.22	0.524	pCi/sample	91%	*0.17*	6/29/06 12:35 a	1.0	0.06201	E908.0
						0.114	1.0	*0.78*		Sample	Sample	ALP7
								Ratio U-234/238 = 2.5				
Batch: 6146436	**Work Order:** H571R1AA			**Report DB ID:** 9H571R10								
TH-228	0.00000169	ND	0.18	0.18	0.472	pCi/sample	76%	*0.*	6/28/06 03:43 a	1.0	0.08291	ISOTH
						0.167	1.0	*0.*		Sample	Sample	ALP172
TH-230	0.120	ND	0.17	0.17	0.289	pCi/sample	76%	*0.42*	6/28/06 03:43 a	1.0	0.08291	ISOTH
						0.0791	1.0	*(1.4)*		Sample	Sample	ALP172
TH-232	0.00000	ND	0.0000	0.12	0.13	pCi/sample	76%	*0.*	6/28/06 03:43 a	1.0	0.08291	ISOTH
							1.0	*0.*		Sample	Sample	ALP172
Batch: 6146439	**Work Order:** H571R1AE			**Report DB ID:** 9H571R10								
ALPHA	-0.5380	ND	2.1	2.1	6.46	pCi/sample	100%	*-0.08*	6/21/06 11:30 a	1.0	0.02082	E900.0
						2.5	20.0	*-0.51*		Sample	Sample	GPC10B
Batch: 6146441	**Work Order:** H571R1AF			**Report DB ID:** 9H571R10								
BETA	1.84	ND	2.9	2.9	6.22	pCi/sample	100%	*0.3*	6/20/06 04:02 p	1.0	0.08334	E900.0
						2.95	5.0	*(1.2)*		Sample	Sample	GPC27A
Batch: 6146445	**Work Order:** H571R1AC			**Report DB ID:** 9H571R10								

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland | **SDG:** 31758 | **Collection Date:** 5/10/2006 12:25:00 PM

Lot-Sample No.: J6E250379-7 | **Report No. :** 32530 | **Received Date:** 5/25/2006 10:00:00 AM

Client Sample ID: 000456 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	**0.299**	ND	0.44	0.44	0.757	pCi/sample	101%	*0.39*	6/24/06 01:25 p	1.0	0.24872	E903.1
						0.324	1.0	*(1.4)*		Sample	Sample	ASC9RC
Batch: 6146452	**Work Order:** H571R1AD			**Report DB ID:** 9H571R10								
RA-228	**0.834**	ND	0.89	0.92	1.97	pCi/sample	88%	*0.42*	6/27/06 06:51 a	1.0	0.24872	E904.0
						0.843	3.1	*(1.8)*		Sample	Sample	GPC2A

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
SDG: 31758
Collection Date: 5/10/2006 12:10:00 PM
Lot-Sample No.: J6E250379-8
Report No. : 32530
Received Date: 5/25/2006 10:00:00 AM
Client Sample ID: 000457
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H571T1AG			**Report DB ID:** 9H571T10								
U-234	0.0377	ND	0.20	0.20	0.595	pCi/sample	98%	*0.06*	6/29/06 12:35 a	1.0	0.06262	E908.0
						0.17	1.0	*0.38*		Sample	Sample	ALP8
U-235	-0.0189	ND	0.038	0.038	0.452	pCi/sample	98%	*-0.04*	6/29/06 12:35 a	1.0	0.06262	E908.0
						0.0981	1.0	*-1.*		Sample	Sample	ALP8
U-238	0.00000	ND	0.0000	0.23	0.256	pCi/sample	98%	*0.*	6/29/06 12:35 a	1.0	0.06262	E908.0
							1.0	*0.*		Sample	Sample	ALP8
Batch: 6146436	**Work Order:** H571T1AA			**Report DB ID:** 9H571T10								
TH-228	0.0508	ND	0.23	0.23	0.609	pCi/sample	44%	*0.08*	6/28/06 03:43 a	1.0	0.08453	ISOTH
						0.167	1.0	*0.45*		Sample	Sample	ALP173
TH-230	0.337	ND	0.40	0.40	0.577	pCi/sample	44%	*0.58*	6/28/06 03:43 a	1.0	0.08453	ISOTH
						0.158	1.0	*(1.7)*		Sample	Sample	ALP173
TH-232	0.0481	ND	0.22	0.22	0.577	pCi/sample	44%	*0.08*	6/28/06 03:43 a	1.0	0.08453	ISOTH
						0.158	1.0	*0.45*		Sample	Sample	ALP173
Batch: 6146439	**Work Order:** H571T1AE			**Report DB ID:** 9H571T10								
ALPHA	0.00000	ND	0.0000	2.4	6.69	pCi/sample	100%	*0.*	6/21/06 11:30 a	1.0	0.02083	E900.0
						2.59	20.0	*0.*		Sample	Sample	GPC10C
Batch: 6146441	**Work Order:** H571T1AF			**Report DB ID:** 9H571T10								
BETA	1.68	ND	2.6	2.6	5.42	pCi/sample	100%	*0.31*	6/20/06 04:02 p	1.0	0.08393	E900.0
						2.57	5.0	*(1.3)*		Sample	Sample	GPC27B
Batch: 6146445	**Work Order:** H571T1AC			**Report DB ID:** 9H571T10								

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E250379-8
Client Sample ID: 000457
Yerington Air Quality - Event #78

SDG: 31758
Report No. : 32530
COC No. :

Collection Date: 5/10/2006 12:10:00 PM
Received Date: 5/25/2006 10:00:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.300	ND	0.36	0.37	0.602	pCi/sample	99%	0.5	6/24/06 02:04 p	1.0	0.25211	E903.1
						0.246	1.0	(1.6)		Sample	Sample	ASCDSA
Batch: 6146452	**Work Order:** H571T1AD			**Report DB ID:** 9H571T10								
RA-228	2.35	=	1.1	1.1	1.82	pCi/sample	86%	(1.3)	6/27/06 06:51 a	1.0	0.25211	E904.0
						0.773	3.1	(4.1)		Sample	Sample	GPC2B

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name:	STL Richland	**SDG:**	31758	**Collection Date:**	5/10/2006 10:10:00 AM
Lot-Sample No.:	J6E250379-9	**Report No. :**	32530	**Received Date:**	5/25/2006 10:00:00 AM
Client Sample ID:	P-0621	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H571V1AG			**Report DB ID:** 9H571V10								
U-234	0.189	ND	0.30	0.30	0.503	pCi/sample	94%	*0.38*	6/29/06 12:36 a	1.0	0.06242	E908.0
						0.109	1.0	*(1.3)*		Sample	Sample	ALP9
U-235	0.00000	ND	0.0000	0.26	0.284	pCi/sample	94%	*0.*	6/29/06 12:36 a	1.0	0.06242	E908.0
							1.0	*0.*		Sample	Sample	ALP9
U-238	0.105	ND	0.21	0.21	0.284	pCi/sample	94%	*0.37*	6/29/06 12:36 a	1.0	0.06242	E908.0
							1.0	*1.*		Sample	Sample	ALP9
								Ratio U-234/238 = 1.8				
Batch: 6146436	**Work Order:** H571V1AA			**Report DB ID:** 9H571V10								
TH-228	0.0814	ND	0.16	0.16	0.325	pCi/sample	85%	*0.25*	6/28/06 03:43 a	1.0	0.08326	ISOTH
						0.0892	1.0	*1.*		Sample	Sample	ALP174
TH-230	0.257	=	0.23	0.23	0.139	pCi/sample	85%	*(1.8)*	6/28/06 03:43 a	1.0	0.08326	ISOTH
							1.0	*(2.2)*		Sample	Sample	ALP174
TH-232	-0.0257	ND	0.051	0.052	0.308	pCi/sample	85%	*-0.08*	6/28/06 03:43 a	1.0	0.08326	ISOTH
						0.0845	1.0	*-1.*		Sample	Sample	ALP174
Batch: 6146439	**Work Order:** H571V1AE			**Report DB ID:** 9H571V10								
ALPHA	4.22	ND	3.7	3.8	6.07	pCi/sample	100%	*0.7*	6/21/06 11:30 a	1.0	0.02113	E900.0
						2.34	20.0	*(2.2)*		Sample	Sample	GPC10D
Batch: 6146441	**Work Order:** H571V1AF			**Report DB ID:** 9H571V10								
BETA	28.1	=	4.6	6.0	6.19	pCi/sample	100%	*(4.5)*	6/20/06 04:02 p	1.0	0.08331	E900.0
						2.93	5.0	*(9.4)*		Sample	Sample	GPC27C
Batch: 6146445	**Work Order:** H571V1AC			**Report DB ID:** 9H571V10								

STL Richland
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V4.15.0 A97

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FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
SDG: 31758
Collection Date: 5/10/2006 10:10:00 AM
Lot-Sample No.: J6E250379-9
Report No. : 32530
Received Date: 5/25/2006 10:00:00 AM
Client Sample ID: P-0621
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.172	ND	0.43	0.43	0.784	pCi/sample	96%	*0.22*	6/24/06 02:02 p	1.0	0.25256	E903.1
						0.348	1.0	*0.79*		Sample	Sample	ASCEHA
Batch: 6146452	**Work Order:** H571V1AD			**Report DB ID:** 9H571V10								
RA-228	2.10	=	1.1	1.1	1.86	pCi/sample	88%	*(1.1)*	6/27/06 06:51 a	1.0	0.25256	E904.0
						0.791	3.1	*(3.8)*		Sample	Sample	GPC2C

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

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FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland **SDG:** 31758 **Collection Date:** 5/10/2006 10:30:00 AM

Lot-Sample No.: J6E250379-10 **Report No. :** 32530 **Received Date:** 5/25/2006 10:00:00 AM

Client Sample ID: P-0622 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H571X1AG			**Report DB ID:** 9H571X10								
U-234	0.160	ND	0.29	0.29	0.564	pCi/sample	100%	*0.28*	6/29/06 12:36 a	1.0	0.0611	E908.0
						0.147	1.0	*(1.1)*		Sample	Sample	ALP10
U-235	0.0799	ND	0.20	0.20	0.478	pCi/sample	100%	*0.17*	6/29/06 12:36 a	1.0	0.0611	E908.0
						0.104	1.0	*0.78*		Sample	Sample	ALP10
U-238	-0.0399	ND	0.056	0.057	0.564	pCi/sample	100%	*-0.07*	6/29/06 12:36 a	1.0	0.0611	E908.0
						0.147	1.0	*-(1.4)*		Sample	Sample	ALP10
								Ratio U-234/238 = -4.0				
Batch: 6146436	**Work Order:** H571X1AA			**Report DB ID:** 9H571X10								
TH-228	0.00000103	ND	0.15	0.15	0.456	pCi/sample	63%	*0.*	6/28/06 03:43 a	1.0	0.08278	ISOTH
						0.144	1.0	*0.*		Sample	Sample	ALP175
TH-230	0.235	ND	0.28	0.28	0.432	pCi/sample	63%	*0.54*	6/28/06 03:43 a	1.0	0.08278	ISOTH
						0.136	1.0	*(1.7)*		Sample	Sample	ALP175
TH-232	0.0586	ND	0.12	0.12	0.159	pCi/sample	63%	*0.37*	6/28/06 03:43 a	1.0	0.08278	ISOTH
							1.0	*1.*		Sample	Sample	ALP175
Batch: 6146439	**Work Order:** H571X1AE			**Report DB ID:** 9H571X10								
ALPHA	6.62	=	4.3	4.6	5.66	pCi/sample	100%	*(1.2)*	6/21/06 11:30 a	1.0	0.02046	E900.0
						2.06	20.0	*(2.9)*		Sample	Sample	GPC10E
Batch: 6146441	**Work Order:** H571X1AF			**Report DB ID:** 9H571X10								
BETA	26.9	=	4.6	5.9	6.19	pCi/sample	100%	*(4.3)*	6/20/06 04:02 p	1.0	0.08167	E900.0
						2.93	5.0	*(9.1)*		Sample	Sample	GPC27D
Batch: 6146445	**Work Order:** H571X1AC			**Report DB ID:** 9H571X10								

STL Richland
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V4.15.0 A97

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FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland | **SDG:** 31758 | **Collection Date:** 5/10/2006 10:30:00 AM

Lot-Sample No.: J6E250379-10 | **Report No. :** 32530 | **Received Date:** 5/25/2006 10:00:00 AM

Client Sample ID: P-0622 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	0.0334	ND	0.34	0.34	0.674	pCi/sample	87%	*0.05*	6/24/06 02:04 p	1.0	0.24507	E903.1
						0.283	1.0	*0.2*		Sample	Sample	ASCGSA
Batch: 6146452	**Work Order:** H571X1AD			**Report DB ID:** 9H571X10								
RA-228	0.687	ND	0.91	0.95	2.11	pCi/sample	79%	*0.33*	6/27/06 06:51 a	1.0	0.24507	E904.0
						0.899	3.1	*(1.4)*		Sample	Sample	GPC2D

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E250379-11
Client Sample ID: P-0623
Yerington Air Quality - Event #78

SDG: 31758
Report No. : 32530
COC No. :

Collection Date: 5/10/2006 10:45:00 AM
Received Date: 5/25/2006 10:00:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H57101AG			**Report DB ID:** 9H571010								
U-234	9.87	=	2.3	2.9	0.779	pCi/sample	65%	(12.7)	6/29/06 12:36 a	1.0	0.06176	E908.0
						0.203	1.0	(6.9)		Sample	Sample	ALP11
U-235	0.248	ND	0.39	0.40	0.66	pCi/sample	65%	0.38	6/29/06 12:36 a	1.0	0.06176	E908.0
						0.143	1.0	(1.3)		Sample	Sample	ALP11
U-238	4.52	=	1.6	1.8	0.66	pCi/sample	65%	(6.8)	6/29/06 12:36 a	1.0	0.06176	E908.0
						0.143	1.0	(5.1)		Sample	Sample	ALP11
								Ratio U-234/238 = 2.2				
Batch: 6146436	**Work Order:** H57101AA			**Report DB ID:** 9H571010								
TH-228	1.31	=	0.56	0.61	0.418	pCi/sample	70%	(3.1)	6/28/06 03:43 a	1.0	0.08233	ISOTH
						0.132	1.0	(4.3)		Sample	Sample	ALP176
TH-230	1.64	=	0.60	0.67	0.323	pCi/sample	70%	(5.1)	6/28/06 03:43 a	1.0	0.08233	ISOTH
						0.0885	1.0	(4.9)		Sample	Sample	ALP176
TH-232	0.996	=	0.47	0.51	0.323	pCi/sample	70%	(3.1)	6/28/06 03:43 a	1.0	0.08233	ISOTH
						0.0885	1.0	(3.9)		Sample	Sample	ALP176
Batch: 6146439	**Work Order:** H57101AE			**Report DB ID:** 9H571010								
ALPHA	71.0	=	14.0	20.0	9.57	pCi/sample	100%	(7.4)	6/21/06 01:23 p	1.0	0.02073	E900.0
						3.93	20.0	(7.)		Sample	Sample	GPC10A
Batch: 6146441	**Work Order:** H57101AF			**Report DB ID:** 9H571010								
BETA	155.0	=	9.4	23.0	6.44	pCi/sample	100%	(24.)	6/20/06 04:02 p	1.0	0.08266	E900.0
						3.05	5.0	(13.2)		Sample	Sample	GPC28B
Batch: 6146445	**Work Order:** H57101AC			**Report DB ID:** 9H571010								

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E250379-11
Client Sample ID: P-0623
Yerington Air Quality - Event #78

SDG: 31758
Report No. : 32530
COC No. :

Collection Date: 5/10/2006 10:45:00 AM
Received Date: 5/25/2006 10:00:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	1.30	=	0.45	0.52	0.43	pCi/sample	94%	(3.)	6/24/06 02:02 p	1.0	0.24863	E903.1
						0.173	1.0	(5.)		Sample	Sample	ASCJMB
Batch: 6146452	**Work Order:** H57101AD			**Report DB ID:** 9H571010								
RA-228	6.86	=	1.6	1.8	1.76	pCi/sample	84%	(3.9)	6/27/06 06:51 a	1.0	0.24863	E904.0
						0.743	3.1	(7.4)		Sample	Sample	GPC3A

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E250379-12
Client Sample ID: P-0624
Yerington Air Quality - Event #78

SDG: 31758
Report No. : 32530
COC No. :

Collection Date: 5/10/2006 11:20:00 AM
Received Date: 5/25/2006 10:00:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H57111AG			**Report DB ID:** 9H571110								
U-234	0.0796	ND	0.20	0.20	0.477	pCi/sample	98%	*0.17*	6/29/06 12:36 a	1.0	0.06285	E908.0
						0.104	1.0	*0.78*		Sample	Sample	ALP12
U-235	0.00000	ND	0.0000	0.24	0.27	pCi/sample	98%	*0.*	6/29/06 12:36 a	1.0	0.06285	E908.0
							1.0	*0.*		Sample	Sample	ALP12
U-238	0.0995	ND	0.20	0.20	0.27	pCi/sample	98%	*0.37*	6/29/06 12:36 a	1.0	0.06285	E908.0
							1.0	*1.*		Sample	Sample	ALP12
								Ratio U-234/238 = 0.8				
Batch: 6146436	**Work Order:** H57111AA			**Report DB ID:** 9H571110								
TH-228	0.0669	ND	0.13	0.13	0.181	pCi/sample	65%	*0.37*	6/28/06 03:43 a	1.0	0.08431	ISOTH
							1.0	*1.*		Sample	Sample	ALP177
TH-230	0.190	ND	0.22	0.22	0.172	pCi/sample	65%	*(1.1)*	6/28/06 03:43 a	1.0	0.08431	ISOTH
							1.0	*(1.7)*		Sample	Sample	ALP177
TH-232	-0.0317	ND	0.063	0.064	0.38	pCi/sample	65%	*-0.08*	6/28/06 03:43 a	1.0	0.08431	ISOTH
						0.104	1.0	*-1.*		Sample	Sample	ALP177
Batch: 6146439	**Work Order:** H57111AE			**Report DB ID:** 9H571110								
ALPHA	5.32	ND	4.1	4.2	6.39	pCi/sample	100%	*0.83*	6/21/06 01:23 p	1.0	0.02113	E900.0
						2.48	20.0	*(2.5)*		Sample	Sample	GPC10B
Batch: 6146441	**Work Order:** H57111AF			**Report DB ID:** 9H571110								
BETA	33.5	=	4.9	7.3	6.23	pCi/sample	100%	*(5.4)*	6/20/06 04:02 p	1.0	0.08344	E900.0
						2.95	5.0	*(9.1)*		Sample	Sample	GPC28C
Batch: 6146445	**Work Order:** H57111AC			**Report DB ID:** 9H571110								

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E250379-12
Client Sample ID: P-0624
Yerington Air Quality - Event #78

SDG: 31758
Report No. : 32530
COC No. :

Collection Date: 5/10/2006 11:20:00 AM
Received Date: 5/25/2006 10:00:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	**0.836**	=	0.53	0.56	0.738	pCi/sample	80%	*(1.1)*	6/24/06 02:03 p	1.0	0.24997	E903.1
						0.304	1.0	*(3.)*		Sample	Sample	ASCKME
Batch: 6146452	**Work Order:** H57111AD			**Report DB ID:** 9H571110								
RA-228	**2.94**	=	1.3	1.4	2.18	pCi/sample	73%	*(1.4)*	6/27/06 06:51 a	1.0	0.24997	E904.0
						0.937	3.1	*(4.3)*		Sample	Sample	GPC3B

Number of Results: 10

Comments:

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E250379-13
Client Sample ID: P-0625
Yerington Air Quality - Event #78

SDG: 31758
Report No. : 32530
COC No. :

Collection Date: 5/10/2006 12:00:00 PM
Received Date: 5/25/2006 10:00:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H57121AG			**Report DB ID:** 9H571210								
U-234	**0.0743**	ND	0.22	0.22	0.584	pCi/sample	88%	*0.13*	6/29/06 12:37 a	1.0	0.06255	E908.0
						0.144	1.0	*0.67*		Sample	Sample	ALP69
U-235	**-0.0175**	ND	0.025	0.025	0.5	pCi/sample	88%	*-0.04*	6/29/06 12:37 a	1.0	0.06255	E908.0
						0.102	1.0	*-(1.4)*		Sample	Sample	ALP69
U-238	**0.0481**	ND	0.22	0.22	0.677	pCi/sample	88%	*0.07*	6/29/06 12:37 a	1.0	0.06255	E908.0
						0.19	1.0	*0.43*		Sample	Sample	ALP69
								Ratio U-234/238 = 1.5				
Batch: 6146436	**Work Order:** H57121AA			**Report DB ID:** 9H571210								
TH-228	**0.0448**	ND	0.090	0.090	0.121	pCi/sample	81%	*0.37*	6/28/06 03:43 a	1.0	0.08351	ISOTH
							1.0	*1.*		Sample	Sample	ALP178
TH-230	**0.340**	=	0.24	0.25	0.115	pCi/sample	81%	*(3.)*	6/28/06 03:43 a	1.0	0.08351	ISOTH
							1.0	*(2.7)*		Sample	Sample	ALP178
TH-232	**0.0425**	ND	0.085	0.085	0.115	pCi/sample	81%	*0.37*	6/28/06 03:43 a	1.0	0.08351	ISOTH
							1.0	*1.*		Sample	Sample	ALP178
Batch: 6146439	**Work Order:** H57121AE			**Report DB ID:** 9H571210								
ALPHA	**6.67**	ND	4.6	4.8	6.68	pCi/sample	100%	*1.*	6/21/06 01:23 p	1.0	0.02095	E900.0
						2.59	20.0	*(2.8)*		Sample	Sample	GPC10C
Batch: 6146441	**Work Order:** H57121AF			**Report DB ID:** 9H571210								
BETA	**34.8**	=	5.2	7.8	6.72	pCi/sample	100%	*(5.2)*	6/20/06 04:02 p	1.0	0.08336	E900.0
						3.19	5.0	*(8.9)*		Sample	Sample	GPC28D
Batch: 6146445	**Work Order:** H57121AC			**Report DB ID:** 9H571210								

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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E250379-13
Client Sample ID: P-0625
Yerington Air Quality - Event #78

SDG: 31758
Report No. : 32530
COC No. :

Collection Date: 5/10/2006 12:00:00 PM
Received Date: 5/25/2006 10:00:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	**0.109**	ND	0.48	0.48	0.889	pCi/sample	78%	*0.12*	6/24/06 02:04 p	1.0	0.25105	E903.1
						0.393	1.0	*0.46*		Sample	Sample	ASCBMB
Batch: 6146452	**Work Order:** H57121AD			**Report DB ID:** 9H571210								
RA-228	**5.54**	=	1.7	1.9	2.41	pCi/sample	67%	*(2.3)*	6/27/06 06:51 a	1.0	0.25105	E904.0
						1.04	3.1	*(6.)*		Sample	Sample	GPC3C

Number of Results: 10

Comments:

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E250379-14
Client Sample ID: P-0626
Yerington Air Quality - Event #78

SDG: 31758
Report No. : 32530
COC No. :

Collection Date: 5/10/2006 12:15:00 PM
Received Date: 5/25/2006 10:00:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H57131AG			**Report DB ID:** 9H571310								
U-234	-0.0475	ND	0.043	0.043	0.671	pCi/sample	87%	-0.07	6/29/06 12:37 a	1.0	0.06266	E908.0
						0.175	1.0	-(2.2)		Sample	Sample	ALP83
U-235	-0.0190	ND	0.027	0.027	0.543	pCi/sample	87%	-0.04	6/29/06 12:37 a	1.0	0.06266	E908.0
						0.111	1.0	-(1.4)		Sample	Sample	ALP83
U-238	-0.0380	ND	0.038	0.039	0.634	pCi/sample	87%	-0.06	6/29/06 12:37 a	1.0	0.06266	E908.0
						0.156	1.0	-(2.)		Sample	Sample	ALP83
								Ratio U-234/238 = 1.3				
Batch: 6146436	**Work Order:** H57131AA			**Report DB ID:** 9H571310								
TH-228	0.289	ND	0.28	0.28	0.444	pCi/sample	94%	0.65	6/28/06 12:43 p	1.0	0.08399	ISOTH
						0.166	1.0	(2.)		Sample	Sample	ALP171
TH-230	0.332	=	0.24	0.25	0.234	pCi/sample	94%	(1.4)	6/28/06 12:43 p	1.0	0.08399	ISOTH
						0.0643	1.0	(2.7)		Sample	Sample	ALP171
TH-232	-0.0195	ND	0.039	0.039	0.234	pCi/sample	94%	-0.08	6/28/06 12:43 p	1.0	0.08399	ISOTH
						0.0643	1.0	-1.		Sample	Sample	ALP171
Batch: 6146439	**Work Order:** H57131AE			**Report DB ID:** 9H571310								
ALPHA	5.30	ND	4.0	4.1	6.11	pCi/sample	100%	0.87	6/21/06 01:23 p	1.0	0.02096	E900.0
						2.35	20.0	(2.6)		Sample	Sample	GPC10D
Batch: 6146441	**Work Order:** H57131AF			**Report DB ID:** 9H571310								
BETA	25.9	=	4.6	5.9	6.46	pCi/sample	100%	(4.)	6/20/06 04:05 p	1.0	0.08415	E900.0
						3.07	5.0	(8.8)		Sample	Sample	GPC31A
Batch: 6146445	**Work Order:** H57131AC			**Report DB ID:** 9H571310								

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
SDG: 31758
Collection Date: 5/10/2006 12:15:00 PM
Lot-Sample No.: J6E250379-14
Report No. : 32530
Received Date: 5/25/2006 10:00:00 AM
Client Sample ID: P-0626
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #78

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	**0.0157**	ND	0.24	0.24	0.485	pCi/sample	96%	*0.03*	6/24/06 02:02 p	1.0	0.24988	E903.1
						0.2	1.0	*0.13*		Sample	Sample	ASCHMA
Batch: 6146452	**Work Order:** H57131AD			**Report DB ID:** 9H571310								
RA-228	**4.18**	=	1.3	1.4	1.79	pCi/sample	86%	*(2.3)*	6/27/06 06:51 a	1.0	0.24988	E904.0
						0.762	3.1	*(5.9)*		Sample	Sample	GPC3D

Number of Results: 10

Comments:

STL Richland
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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E250379-15
Client Sample ID: P-0627
Yerington Air Quality - Event #78

SDG: 31758
Report No. : 32530
COC No. :

Collection Date: 5/10/2006 10:15:00 AM
Received Date: 5/25/2006 10:00:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	**Work Order:** H57141AG			**Report DB ID:** 9H571410								
U-234	-0.0193	ND	0.027	0.027	0.552	pCi/sample	86%	-0.04	6/29/06 12:37 a	1.0	0.06237	E908.0
						0.112	1.0	-(1.4)		Sample	Sample	ALP84
U-235	-0.0193	ND	0.027	0.027	0.552	pCi/sample	86%	-0.04	6/29/06 12:37 a	1.0	0.06237	E908.0
						0.112	1.0	-(1.4)		Sample	Sample	ALP84
U-238	0.00000	ND	0.0000	0.30	0.327	pCi/sample	86%	0.	6/29/06 12:37 a	1.0	0.06237	E908.0
							1.0	0.		Sample	Sample	ALP84
Batch: 6146436	**Work Order:** H57141AA			**Report DB ID:** 9H571410								
TH-228	0.00000162	ND	0.17	0.17	0.451	pCi/sample	78%	0.	6/28/06 12:43 p	1.0	0.08423	ISOTH
						0.16	1.0	0.		Sample	Sample	ALP172
TH-230	0.115	ND	0.17	0.17	0.276	pCi/sample	78%	0.42	6/28/06 12:43 p	1.0	0.08423	ISOTH
						0.0756	1.0	(1.4)		Sample	Sample	ALP172
TH-232	0.00000	ND	0.0000	0.11	0.125	pCi/sample	78%	0.	6/28/06 12:43 p	1.0	0.08423	ISOTH
							1.0	0.		Sample	Sample	ALP172
Batch: 6146439	**Work Order:** H57141AE			**Report DB ID:** 9H571410								
ALPHA	2.58	ND	3.1	3.1	5.55	pCi/sample	100%	0.46	6/21/06 01:23 p	1.0	0.02096	E900.0
						2.02	20.0	(1.7)		Sample	Sample	GPC10E
Batch: 6146441	**Work Order:** H57141AF			**Report DB ID:** 9H571410								
BETA	26.4	=	4.5	6.3	5.98	pCi/sample	100%	(4.4)	6/20/06 04:05 p	1.0	0.08324	E900.0
						2.83	5.0	(8.3)		Sample	Sample	GPC31B
Batch: 6146445	**Work Order:** H57141AC			**Report DB ID:** 9H571410								

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E250379-15
Client Sample ID: P-0627
Yerington Air Quality - Event #78

SDG: 31758
Report No. : 32530
COC No. :

Collection Date: 5/10/2006 10:15:00 AM
Received Date: 5/25/2006 10:00:00 AM
Matrix: FILTER AIR

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
RA-226	**0.231**	ND	0.33	0.33	0.566	pCi/sample	90%	*0.41*	6/24/06 02:44 p	1.0	0.25012	E903.1
						0.238	1.0	*(1.4)*		Sample	Sample	ASCLMC
Batch: 6146452	**Work Order:** H57141AD			**Report DB ID:** 9H571410								
RA-228	**7.00**	=	1.6	1.9	2.21	pCi/sample	83%	*(3.2)*	6/27/06 06:51 a	1.0	0.25012	E904.0
						0.971	3.1	*(7.2)*		Sample	Sample	GPC4A

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 29-Jun-06

Lab Name: STL Richland

SDG: 31758

Lot-Sample No.: J6E260000-431

Report No. : 32530

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	Work Order: H6AT01AA			Report DB ID: H6AT01AB								
U-234	0.0139	ND	0.025	0.025	0.0492	pCi/sample	101%	0.28	6/29/06 12:37 a	1.0	1.0	E908.0
					0.0128	1.0		(1.1)		Sample	Sample	ALP85
U-235	0.00802	ND	0.017	0.018	0.0351	pCi/sample	101%	0.23	6/29/06 12:37 a	1.0	1.0	E908.0
					0.00573	1.0		0.91		Sample	Sample	ALP85
U-238	0.00000	ND	0.0000	0.021	0.0236	pCi/sample	101%	0.	6/29/06 12:37 a	1.0	1.0	E908.0
						1.0		0.		Sample	Sample	ALP85

Number of Results: 3

Comments:

STL Richland

rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II
BLANK RESULTS

Date: 29-Jun-06

Lab Name: STL Richland
SDG: 31758
Lot-Sample No.: J6E260000-436
Report No. : 32530
Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146436	Work Order: H6AW11AA			Report DB ID: H6AW11AB								
TH-228	0.00665	ND	0.013	0.013	0.0266	pCi/sample	85%	0.25	6/28/06 12:43 p	1.0	1.0	ISOTH
					0.00729	1.0		1.		Sample	Sample	ALP173
TH-230	0.0231	ND	0.021	0.021	0.0252	pCi/sample	85%	0.92	6/28/06 12:43 p	1.0	1.0	ISOTH
					0.00691	1.0		(2.2)		Sample	Sample	ALP173
TH-232	-0.0021	ND	0.0042	0.0042	0.0252	pCi/sample	85%	-0.08	6/28/06 12:43 p	1.0	1.0	ISOTH
					0.00691	1.0		-1.		Sample	Sample	ALP173

Number of Results: 3

Comments:

STL Richland
rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 29-Jun-06

Lab Name: STL Richland

SDG: 31758

Lot-Sample No.: J6E260000-439

Report No. : 32530

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146439	Work Order: H6AXH1AA			Report DB ID: H6AXH1AB								
ALPHA	-0.00228	ND	0.066	0.066	0.173	pCi/sample	100%	-0.01	6/21/06 03:22 p	1.0	1.0	E900.0
					0.071	20.0		-0.07		Sample	Sample	GPC10A

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 29-Jun-06

Lab Name: STL Richland

SDG: 31758

Lot-Sample No.: J6E260000-441

Report No. : 32530

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146441	Work Order:	H6A001AA		Report DB ID:	H6A001AB							
BETA	-0.0588	ND	0.24	0.24	0.556	pCi/sample	100%	-0.11	6/20/06 04:05 p	1.0	1.0	E900.0
					0.265	5.0		-0.48		Sample	Sample	GPC31C

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 29-Jun-06

Lab Name: STL Richland

SDG: 31758

Lot-Sample No.: J6E260000-445

Report No. : 32530

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146445	Work Order: H6A1V1AA			Report DB ID: H6A1V1AB								
RA-226	0.0247	ND	0.094	0.094	0.176	pCi/sample	86%	0.14	6/24/06 02:42 p	1.0	1.0	E903.1
					0.0764	1.0		0.53		Sample	Sample	ASCNMA

Number of Results: 1

Comments:

STL Richland

rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 29-Jun-06

Lab Name: STL Richland

SDG: 31758

Lot-Sample No.: J6E260000-452

Report No. : 32530

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6146452	Work Order: H6A3J1AA			Report DB ID: H6A3J1AB								
RA-228	0.395	ND	0.27	0.28	0.535	pCi/sample	77%	0.74	6/27/06 06:51 a	1.0	1.0	E904.0
					0.231	3.1		(2.8)		Sample	Sample	GPC4B

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 29-Jun-06

Lab Name: STL Richland

SDG: 31758

Lot-Sample No.: J6E260000-431

Report No. : 32530

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6146431	Work Order: H6AT01AC			Report DB ID: H6AT01CS									
U-234	1.04	=	0.17	0.24	0.0401	pCi/sample	92.96%	0.972	0.0056	107%	6/29/06 12:38 a	1.0	E908.0
						Rec Limits:				0.1		Sample	ALP87
U-238	0.902	=	0.16	0.21	0.0192	pCi/sample	92.96%	1.02	0.0059	89%	6/29/06 12:38 a	1.0	E908.0
						Rec Limits:				-0.1		Sample	ALP87

Number of Results: 2

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 29-Jun-06

Lab Name: STL Richland

SDG: 31758

Lot-Sample No.: J6E260000-436

Report No. : 32530

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6146436	Work Order: H6AW11AC			Report DB ID: H6AW11CS									
TH-230	1.87	=	0.19	0.39	0.0288	pCi/sample	75.66%	1.81	0.06	103%	6/28/06 12:43 p	1.0	ISOTH
							Rec Limits:	70.	130.	0.0		Sample	ALP174

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 29-Jun-06

Lab Name: STL Richland

SDG: 31758

Lot-Sample No.: J6E260000-439

Report No. : 32530

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6146439	Work Order: H6AXH1AC			Report DB ID: H6AXH1CS									
ALPHA	2.07	=	0.31	0.52	0.135	pCi/sample	100.00%	2.38	0.075	87%	6/21/06 03:22 p	1.0	E900.0
						Rec Limits:				-0.1		Sample	GPC10B

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 29-Jun-06

Lab Name: STL Richland

SDG: 31758

Lot-Sample No.: J6E260000-441

Report No. : 32530

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6146441	Work Order: H6A001AC			Report DB ID: H6A001CS									
BETA	4.21	=	0.48	0.74	0.516	pCi/sample	100.00%	4.60	0.037	92%	6/20/06 04:05 p	1.0	E900.0
						Rec Limits:				-0.1		Sample	GPC31D

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 29-Jun-06

Lab Name: STL Richland

SDG: 31758

Lot-Sample No.: J6E260000-445

Report No. : 32530

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6146445	Work Order: H6A1V1AC			Report DB ID: H6A1V1CS									
RA-226	1.36	=	0.21	0.35	0.116	pCi/sample	92.63%	1.42	0.022	96%	6/24/06 02:44 p	1.0	E903.1
							Rec Limits:	70.	130.	0.0		Sample	ASCPMB

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 29-Jun-06

Lab Name: STL Richland

SDG: 31758

Lot-Sample No.: J6E260000-452

Report No. : 32530

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6146452	Work Order: H6A3J1AC			Report DB ID: H6A3J1CS									
RA-228	4.91	=	0.62	0.92	0.478	pCi/sample	83.74%	5.12	0.021	96%	6/27/06 06:51 a	1.0	E904.0
							Rec Limits:	70.	130.	0.0		Sample	GPC4C

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

CHAIN OF CUSTODY

BROWN AND CALDWELL J6E250379 31758 Due 6.22.06

CHAIN OF CUSTODY RECORD

COC No. _____

☐ 3264 Goni Road / Suite 153
Carson City, NV 89706
775-883-4118 / FAX 775-883-5108

☐ 4425 W. Spring Mountain Road / Suite 225
Las Vegas, NV 89102
702-938-4080 / FAX 702-938-4082

☐ 201 East Washington Street / Suite 500
Phoenix, AZ 85004
602-567-4000 / FAX 602-567-4001

VER A000156

PROJECT NAME: Lexington Air City

PROJECT NUMBER: 121243

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, WEST SACRAMENTO

G6E120166

1/6 OF THE EXPOSED FILTER WAS UTILIZED FOR THE METALS ANALYSIS. SACRAMENTO LOT #

LINE NO.	SAMPLE – I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESER-VATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC – REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	000450	5/10/06	10:20	MS	1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H5709					----	
02	000451		10:35		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H571F					----	
03	000452		10:50		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H571G					----	
04	000453		11:25		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H571M					----	
05	000454		12:05		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H571N					----	
06	000455		12:20		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H571Q					----	
07	000456		12:25		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H571R					----	
08	000457		12:10		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H571T					----	
09														----	
10														----	

	DATE	TIME
COLLECTED & RELEASED BY: [signature]	5/11/06	16:00
RECEIVED BY: [signature]	5/12/06	9:25
RECORD RETURNED BY:	/ /	:
COURIER: FEDEX		

COOLER I.D.:

RELINQUISHED BY: Steve Valmore

DATE	TIME
5/24/06	1600

SHIPPING NUMBER: 7909 1932 [illegible]

COMMENTS (see note on back):

RECEIVED IN GOOD CONDITION UNDER COC
MAY 12 2006
INI.

DISTRIBUTION: WHITE – PROJECT FILE • CANARY – LAB RECEIPT • PINK – DATA MANAGEMENT • GOLDENROD – FIELD

USE A BALLPOINT PEN, BLACK INK, AND PRESS FIRMLY. INSTRUCTIONS ARE ON THE BACK.

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No._____

☒ 3264 Goni Road / Suite 153
Carson City, NV 89706
775-883-4118 / FAX 775-883-5108

☐ 4425 W. Spring Mountain Road / Suite 225
Las Vegas, NV 89102
702-938-4080 / FAX 702-938-4082

☐ 201 East Washington Street / Suite 500
Phoenix, AZ 85004
602-567-4000 / FAX 602-567-4001

PROJECT NAME:

PROJECT NUMBER:

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, WEST SACRAMENTO

1/6 OF THE EXPOSED FILTER WAS UTILIZED FOR THE METALS ANALYSIS. SACRAMENTO LOT # G6E120166

LINE NO.	SAMPLE – I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESER-VATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC – REQ	~~TAT~~	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	P-0621	5/14/06	10:10	MS	1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H571V					----	
02	P-0622		10:30		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H571X					----	
03	P-0623		10:45		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H5710					----	
04	P-0624		11:20		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H5711					----	
05	P-0625		12:00		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H5712					----	
06	P-0626		12:15		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H5713					----	
07	P-0627		10:15		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H5714					----	
08														----	
09														----	
10														----	

	DATE	TIME		DATE	TIME
COLLECTED & RELEASED BY: [illegible]	5/14/06	16:00	COOLER I.D.:		
RECEIVED BY: Wing Vue	5/16/06	9:25	RELINQUISHED BY: Steve Valmoes	5/24/06	600
RECORD RETURNED BY:	/ /	:			
COURIER: FEDEX			SHIPPING NUMBER: 7109 1022 5870		

COMMENTS (see note on back):

RECEIVED IN GOOD CONDITION UNDER COC
MAY 12 2006
INI: [illegible]

DISTRIBUTION: WHITE – PROJECT FILE • CANARY – LAB RECEIPT • PINK – DATA MANAGEMENT • GOLDENROD – FIELD

USE A BALLPOINT PEN, BLACK INK, AND PRESS FIRMLY. INSTRUCTIONS ARE ON THE BACK.

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 5.25.06 10:00

Client: BNC SDG #: 31758 NA [ ] SAF #: _____ NA [ ]

Work Order Number: J6E250379 Chain of Custody # _____

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [✓] Yes [ ] No [ ]
2. Custody Seals dated and signed? NA [✓] Yes [ ] No [ ]
3. Chain of Custody record present? NA [✓] Yes [ ] No [ ]
4. Cooler temperature: _____ NA [✓] Yes [✓] No [ ]
5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]
6. Number of samples in shipping container: 15
7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]
8. Samples have:
   - _____ tape
   - _____ custody seals
   - _____ hazard labels
   - ✓ appropriate samples labels
9. Samples are:
   - ✓ in good condition
   - _____ broken
   - _____ leaking
   - _____ have air bubbles (Only for samples requiring head space)
10. Sample pH taken? 7LT NA [✓] pH<2 [ ] pH>2 [ ] adjusted pH [ ]
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: S. Welch Date: 5.25.06

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 12/05, Rev. 6

URANIUM ISOTOPIC

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/29/2006 1:06:20 PM

Lot No., Due Date: J6E250379; 06/22/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6146431; RUSIO Ulso by ALP

SDG, Matrix: 31758; FILTER

1.0 COC

1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions? Yes ✓ No N/A

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? Yes ✓ No N/A

2.2 Are the QC appropriate for the analysis included in the batch? Yes ✓ No N/A

2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? Yes ✓ No N/A

2.4 Does the Worksheets include a Tracer Vial label for each sample? Yes ✓ No N/A

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits? Yes ✓ No N/A

3.2 Is the LCS result, yield, and MDA within contract limits? Yes ✓ No N/A

3.3 Are the MS/MSD results, yields, and MDA within contract limits? Yes No N/A ✓

3.4 Are the duplicate result, yields, and MDAs within contract limits? Yes No N/A ✓

3.5 Are the sample yields and MDAs within contract limits? Yes ✓ No N/A

4.0 Raw Data

4.1 Were results calculated in the correct units? Yes ✓ No N/A

4.2 Were analysis volumes entered correctly? Yes ✓ No N/A

4.3 Were Yields entered correctly? Yes No N/A ✓

4.4 Were spectra reviewed/meet contractual requirements? Yes ✓ No N/A

4.5 Were raw counts reviewed for anomalies? Yes ✓ No N/A

5.0 Other

5.1 Are all nonconformances included and noted? Yes No N/A ✓

5.2 Are all required forms filled out? Yes ✓ No N/A

5.3 Was the correct methodology used? Yes ✓ No N/A

5.4 Was transcription checked? Yes ✓ No N/A

5.5 Were all calculations checked at a minimum frequency? Yes ✓ No N/A

5.6 Are worksheet entries complete and correct? Yes ✓ No N/A

6.0 Comments on any No response:

Hood rain in samples H5709. H571F. H5710. H5711 as noted in an earlier NCM.

First Level Review Pam Anderson **Date** 6-29-06

SEVERN TRENT **STL**

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6146431

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	6-29-06 ✓		✓
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Sherryl A. Adam Date: 6-29-06

STL RICHLAND

6/15/2006 3:26:34 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

7Y Uiso PrpRC5016/5086, SepRC5067(5039)
SR Uranium-234,235,238 by Alpha Spec
01 STANDARD TEST SET

Balance Id:1120373922
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: HansenM

AnalyDueDate: 06/21/2006

Batch: 6146431 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: None

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 **H5709-1-AG** J6E250379-1-SAMP 05/10/2006 10:20	0.833sa,g	500.31sa,g	37.54g,in	0.0625g	UITC15724 05/24/06,pd 01/20/04,r	200				
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
2 **H571F-1-AG** J6E250379-2-SAMP 05/10/2006 10:35	0.833sa,g	502.43sa,g	37.59g,in	0.0623g	UITC15725 05/24/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
3 **H571G-1-AG** J6E250379-3-SAMP 05/10/2006 10:50	0.833sa,g	501.65sa,g	37.60g,in	0.0624g	UITC15726 05/24/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
4 **H571M-1-AG** J6E250379-4-SAMP 05/10/2006 11:25	0.833sa,g	501.39sa,g	37.69g,in	0.0626g	UITC15727 05/24/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
5 **H571N-1-AG** J6E250379-5-SAMP 05/10/2006 12:05	0.833sa,g	500.72sa,g	37.70g,in	0.0627g	UITC15728 05/24/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
6 **H571Q-1-AG** J6E250379-6-SAMP 05/10/2006 12:20	0.833sa,g	501.55sa,g	37.52g,in	0.0623g	UITC15729 05/24/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:
7 **H571R-1-AG** J6E250379-7-SAMP 05/10/2006 12:25	0.833sa,g	503.75sa,g	37.50g,in	0.062g	UITC15730 05/24/06,pd 01/20/04,r					
			AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:

64

STL RICHLAND

6/15/2006 3:26:35 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

7Y Uiso PrpRC5016/5086, SepRC5067(5039)
SR Uranium-234,235,238 by Alpha Spec
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146431 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: HansenM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
8 **H571T-1-AG** J6E250379-8-SAMP 05/10/2006 12:10	0.833sa,g	501.13sa,g	37.67g,in	0.0626g	UITC15731 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
9 **H571V-1-AG** J6E250379-9-SAMP 05/10/2006 10:10	0.833sa,g	501.34sa,g	37.57g,in	0.0624g	UITC15732 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
10 **H571X-1-AG** J6E250379-10-SAMP 05/10/2006 10:30	0.833sa,g	511.39sa,g	37.51g,in	0.0611g	UITC15733 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
11 **H5710-1-AG** J6E250379-11-SAMP 05/10/2006 10:45	0.833sa,g	506.21sa,g	37.53g,in	0.0618g	UITC15734 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
12 **H5711-1-AG** J6E250379-12-SAMP 05/10/2006 11:20	0.833sa,g	500.36sa,g	37.75g,in	0.0628g	UITC15735 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
13 **H5712-1-AG** J6E250379-13-SAMP 05/10/2006 12:00	0.833sa,g	500.63sa,g	37.59g,in	0.0625g	UITC15736 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
14 **H5713-1-AG** J6E250379-14-SAMP 05/10/2006 12:15	0.833sa,g	500.78sa,g	37.67g,in	0.0627g	UITC15737 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:

STL RICHLAND

6/15/2006 3:26:36 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

7Y Uiso PrpRC5016/5086, SepRC5067(5039)
SR Uranium-234,235,238 by Alpha Spec
01 STANDARD TEST SET

Balance Id:1120373922
Pipet #:

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146431 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: HansenM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15H5714-1-AG J6E250379-15-SAMP 05/10/2006 10:15	0.833sa,g	501.49sa,g	37.55g,in	0.0624g	UITC15738 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
16H6AT0-1-AA-B J6E260000-431-BLK 05/10/2006 10:20			1.00sa,in	1.00sa	UITC15739 05/24/06,pd 01/20/04,r					
		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:
17H6AT0-1-AC-C J6E260000-431-LCS 05/10/2006 10:20			1.00sa,in	1.00sa	UISF0456 06/15/06,pd 01/20/04,r					
		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:

Comments: H5709-SAMP Comments

Please note that a yellowish orange substance fell into or around samples H5709, H5710, H5710 & H5711, substance came from inside the hood possibly caused by the recent rainfall MH 6-15-06

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H57091AG-SAMP Constituent List:

U-232	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20	U-234	RDL:1	pCi/sam	LCL:	UCL:	RPD:
U-235	RDL:1	pCi/sam	LCL:	UCL:	RPD:	U-238	RDL:1	pCi/sam	LCL:	UCL:	RPD:

H6AT01AA-BLK:

U-232	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20	U-234	RDL:1	pCi/sam	LCL:	UCL:	RPD:
U-235	RDL:1	pCi/sam	LCL:	UCL:	RPD:	U-238	RDL:1	pCi/sam	LCL:	UCL:	RPD:

H6AT01AC-LCS:

U-232	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20	Uranium	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20

H57091AG-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

66

6/29/2006 12:06:12 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/29/2005, 7/4/2006, Batch: '6146431', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6146431						
AC		**CalcC**	**HansenM**	6/13/2006 1:38:50 PM		
SC			tamosaitism	IsBatched	5/26/2006 2:11:28 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/13/2006 1:38:50 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/16/2006 7:45:09 AM	RICH-RC-5016 REVISION 5
SC			ManisD	Sep2C	6/28/2006 5:35:06 PM	RICH-RC-5039 REV 5
SC			BlackCL	CalcC	6/29/2006 6:51:59 AM	RICH-RD-0008 REVISION 4
AC			**HansenM**	6/16/2006 7:45:09		
AC			**ManisD**	6/28/2006 5:35:06 PM		
AC			**BlackCL**	6/29/2006 6:51:59		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 4

ICOCFractions v4.8.18

6/29/2006 12:06:11 PM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Mda	Sample Date / Units	Expected	Yield	Volumes
31758	**9H570910**			**J6E2503791**	000450	FILTER	5/25/2006 10:00:00		5/10/2006 10:20:00 AM			
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**1.0298E+01**	2.869E+00	3.064E+00	8.319E+00	PCI/SA	1.0	1.0E+0	2.093E-2
BETA	BDS8		0	6/20/2006 2:03:16 PM	**4.4442E+01**	2.683E+00	4.815E+00	6.021E+00	PCI/SA	1.0	1.0E+0	3.346E-2
RA-226	BXTE		0	6/24/2006 1:25:01 PM	**2.9344E-01**	2.202E-01	2.222E-01	7.659E-01	PCI/SA	0.904	1.0E+0	2.504E-1
RA-228	BXTF		0	6/27/2006 6:50:22 AM	**8.0395E-01**	6.103E-01	6.32E-01	2.817E+00	PCI/SA	0.835	1.0E+0	2.504E-1
U-234	7YSR		0	6/29/2006 12:34:31	**8.4682E-01**	2.967E-01	3.044E-01	5.565E-01	PCI/SA	1.047	1.0E+0	3.25E-2
U-235	7YSR		0	6/29/2006 12:34:31	**7.8769E-02**	1.004E-01	1.006E-01	4.716E-01	PCI/SA	1.047	1.0E+0	3.25E-2
U-238	7YSR		0	6/29/2006 12:34:31	**7.4835E-01**	2.799E-01	2.862E-01	5.565E-01	PCI/SA	1.047	1.0E+0	3.25E-2
31758	**9H571010**			**J6E25037911**	P-0623	FILTER	5/25/2006 10:00:00		5/10/2006 10:45:00 AM			
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**7.1046E+01**	6.941E+00	1.016E+01	9.566E+00	PCI/SA	1.0	1.0E+0	2.073E-2
BETA	BDS8		0	6/20/2006 4:02:16 PM	**1.549E+02**	4.677E+00	1.173E+01	6.441E+00	PCI/SA	1.0	1.0E+0	3.266E-2
RA-226	BXTE		0	6/24/2006 2:02:00 PM	**1.3001E+00**	2.242E-01	2.606E-01	4.298E-01	PCI/SA	0.943	1.0E+0	2.486E-1
RA-228	BXTF		0	6/27/2006 6:51:14 AM	**6.8613E+00**	7.753E-01	9.222E-01	1.757E+00	PCI/SA	0.839	1.0E+0	2.486E-1
U-234	7YSR		0	6/29/2006 12:36:32	**9.8683E+00**	1.17E+00	1.432E+00	7.789E-01	PCI/SA	0.646	1.0E+0	3.176E-2
U-235	7YSR		0	6/29/2006 12:36:32	**2.4808E-01**	1.969E-01	1.979E-01	6.602E-01	PCI/SA	0.646	1.0E+0	3.176E-2
U-238	7YSR		0	6/29/2006 12:36:32	**4.5207E+00**	7.922E-01	8.778E-01	6.602E-01	PCI/SA	0.646	1.0E+0	3.176E-2
31758	**9H571110**			**J6E25037912**	P-0624	FILTER	5/25/2006 10:00:00		5/10/2006 11:20:00 AM			
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**5.3238E+00**	2.048E+00	2.122E+00	6.394E+00	PCI/SA	1.0	1.0E+0	2.113E-2
BETA	BDS8		0	6/20/2006 4:02:16 PM	**3.3468E+01**	2.452E+00	3.66E+00	6.231E+00	PCI/SA	1.0	1.0E+0	3.344E-2
RA-226	BXTE		0	6/24/2006 2:03:00 PM	**8.364E-01**	2.672E-01	2.798E-01	7.382E-01	PCI/SA	0.803	1.0E+0	2.5E-1
RA-228	BXTF		0	6/27/2006 6:51:14 AM	**2.9435E+00**	6.43E-01	6.788E-01	2.177E+00	PCI/SA	0.728	1.0E+0	2.5E-1
U-234	7YSR		0	6/29/2006 12:36:44	**7.963E-02**	1.015E-01	1.017E-01	4.767E-01	PCI/SA	0.98	1.0E+0	3.285E-2
U-235	7YSR		0	6/29/2006 12:36:44	**0.0E+00**	0.0E+00	1.219E-01	2.697E-01	PCI/SA	0.98	1.0E+0	3.285E-2
U-238	7YSR		0	6/29/2006 12:36:44	**9.9536E-02**	9.954E-02	9.986E-02	2.697E-01	PCI/SA	0.98	1.0E+0	3.285E-2
31758	**9H571210**			**J6E25037913**	P-0625	FILTER	5/25/2006 10:00:00		5/10/2006 12:00:00 PM			
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**6.673E+00**	2.279E+00	2.383E+00	6.679E+00	PCI/SA	1.0	1.0E+0	2.095E-2
BETA	BDS8		0	6/20/2006 4:02:16 PM	**3.475E+01**	2.592E+00	3.884E+00	6.718E+00	PCI/SA	1.0	1.0E+0	3.336E-2
RA-226	BXTE		0	6/24/2006 2:04:00 PM	**1.0922E-01**	2.375E-01	2.378E-01	8.892E-01	PCI/SA	0.776	1.0E+0	2.51E-1
RA-228	BXTF		0	6/27/2006 6:51:14 AM	**5.5446E+00**	8.4E-01	9.309E-01	2.413E+00	PCI/SA	0.67	1.0E+0	2.51E-1
U-234	7YSR		0	6/29/2006 12:37:06	**7.435E-02**	1.107E-01	1.109E-01	5.84E-01	PCI/SA	0.88	1.0E+0	3.255E-2
U-235	7YSR		0	6/29/2006 12:37:06	**-1.7498E-02**	1.237E-02	1.245E-02	4.997E-01	PCI/SA	0.88	1.0E+0	3.255E-2
U-238	7YSR		0	6/29/2006 12:37:06	**4.8103E-02**	1.118E-01	1.118E-01	6.769E-01	PCI/SA	0.88	1.0E+0	3.255E-2
31758	**9H571310**			**J6E25037914**	P-0626	FILTER	5/25/2006 10:00:00		5/10/2006 12:15:00 PM			
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**5.2958E+00**	1.995E+00	2.067E+00	6.113E+00	PCI/SA	1.0	1.0E+0	2.096E-2
BETA	BDS8		0	6/20/2006 4:05:03 PM	**2.5918E+01**	2.289E+00	2.94E+00	6.465E+00	PCI/SA	1.0	1.0E+0	3.415E-2
RA-226	BXTE		0	6/24/2006 2:02:03 PM	**1.5696E-02**	1.185E-01	1.185E-01	4.848E-01	PCI/SA	0.96	1.0E+0	2.499E-1
RA-228	BXTF		0	6/27/2006 6:51:14 AM	**4.1782E+00**	6.357E-01	7.052E-01	1.786E+00	PCI/SA	0.862	1.0E+0	2.499E-1
U-234	7YSR		0	6/29/2006 12:37:18	**-4.7527E-02**	2.125E-02	2.161E-02	6.713E-01	PCI/SA	0.87	1.0E+0	3.266E-2
U-235	7YSR		0	6/29/2006 12:37:18	**-1.9011E-02**	1.344E-02	1.353E-02	5.429E-01	PCI/SA	0.87	1.0E+0	3.266E-2
U-238	7YSR		0	6/29/2006 12:37:18	**-3.8022E-02**	1.901E-02	1.927E-02	6.344E-01	PCI/SA	0.87	1.0E+0	3.266E-2
31758	**9H571410**			**J6E25037915**	P-0627	FILTER	5/25/2006 10:00:00		5/10/2006 10:15:00 AM			
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**2.5759E+00**	1.532E+00	1.554E+00	5.551E+00	PCI/SA	1.0	1.0E+0	2.096E-2
BETA	BDS8		0	6/20/2006 4:05:03 PM	**2.64E+01**	2.228E+00	3.165E+00	5.976E+00	PCI/SA	1.0	1.0E+0	3.324E-2
RA-226	BXTE		0	6/24/2006 2:44:00 PM	**2.3057E-01**	1.641E-01	1.66E-01	5.665E-01	PCI/SA	0.9	1.0E+0	2.501E-1
RA-228	BXTF		0	6/27/2006 6:51:23 AM	**6.9961E+00**	8.188E-01	9.699E-01	2.208E+00	PCI/SA	0.826	1.0E+0	2.501E-1
U-234	7YSR		0	6/29/2006 12:37:37	**-1.9313E-02**	1.366E-02	1.375E-02	5.516E-01	PCI/SA	0.859	1.0E+0	3.237E-2
U-235	7YSR		0	6/29/2006 12:37:37	**-1.9313E-02**	1.366E-02	1.375E-02	5.516E-01	PCI/SA	0.859	1.0E+0	3.237E-2
U-238	7YSR		0	6/29/2006 12:37:37	**0.0E+00**	0.0E+00	1.478E-01	3.271E-01	PCI/SA	0.859	1.0E+0	3.237E-2
31758	**9H571F10**			**J6E2503792**	000451	FILTER	5/25/2006 10:00:00		5/10/2006 10:35:00 AM			
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**7.5196E+00**	2.329E+00	2.457E+00	6.451E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8		0	6/20/2006 2:03:16 PM	**3.3469E+01**	2.585E+00	3.53E+00	7.012E+00	PCI/SA	1.0	1.0E+0	3.334E-2
RA-226	BXTE		0	6/24/2006 1:24:02 PM	**5.6233E-02**	1.553E-01	1.554E-01	6.207E-01	PCI/SA	0.841	1.0E+0	2.49E-1

6146431, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 50 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H6AT01AA=> , mat:FILTER | Air *wo:H6AT01AA=> , mat:FILTER | Air *wo:H6AT01AC=> , mat:FILTER | Air *wo:H6AT01AC=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot uncert	Sample Date / Mda	Units	Expected	Yield	Volumes	
RA-228	BXTF	0		6/27/2006 6:50:22 AM	**2.162E+00**	7.172E-01	7.455E-01	2.967E+00	PCI/SA		0.758	1.0E+0	2.49E-1
U-234	7YSR	0		6/29/2006 12:34:43	**9.9766E-02**	9.977E-02	1.001E-01	2.704E-01	PCI/SA		1.018	1.0E+0	3.232E-2
U-235	7YSR	0		6/29/2006 12:34:43	**7.9806E-02**	1.017E-01	1.019E-01	4.779E-01	PCI/SA		1.018	1.0E+0	3.232E-2
U-238	7YSR	0		6/29/2006 12:34:43	**-3.325E-05**	1.093E-01	1.093E-01	7.344E-01	PCI/SA		1.018	1.0E+0	3.232E-2
31758	**9H571G10**			**J6E2503793**	000452	FILTER	5/25/2006 10:00:00	5/10/2006 10:50:00 AM					
ALPHA	BAS7	0		6/21/2006 9:37:56 AM	**8.3814E+00**	2.486E+00	2.635E+00	6.711E+00	PCI/SA		1.0	1.0E+0	2.077E-2
BETA	BDS8	0		6/20/2006 4:02:18 PM	**3.6893E+01**	2.583E+00	3.739E+00	6.749E+00	PCI/SA		1.0	1.0E+0	3.321E-2
RA-226	BXTE	0		6/24/2006 1:25:00 PM	**-3.8645E-01**	2.412E-01	2.443E-01	1.027E+00	PCI/SA		0.817	1.0E+0	2.509E-1
RA-228	BXTF	0		6/27/2006 6:50:22 AM	**9.5052E-01**	7.221E-01	7.62E-01	3.395E+00	PCI/SA		0.734	1.0E+0	2.509E-1
U-234	7YSR	0		6/29/2006 12:34:51	**2.1996E-02**	1.185E-01	1.185E-01	7.557E-01	PCI/SA		0.871	1.0E+0	3.244E-2
U-235	7YSR	0		6/29/2006 12:34:51	**1.7602E-01**	1.587E-01	1.593E-01	6.217E-01	PCI/SA		0.871	1.0E+0	3.244E-2
U-238	7YSR	0		6/29/2006 12:34:51	**-8.8019E-02**	4.401E-02	4.459E-02	7.557E-01	PCI/SA		0.871	1.0E+0	3.244E-2
31758	**9H571M10**			**J6E2503794**	000453	FILTER	5/25/2006 10:00:00	5/10/2006 11:25:00 AM					
ALPHA	BAS7	0		6/21/2006 9:37:56 AM	**1.0018E+01**	2.543E+00	2.744E+00	6.144E+00	PCI/SA		1.0	1.0E+0	2.088E-2
BETA	BDS8	0		6/20/2006 4:02:18 PM	**4.4018E+01**	2.765E+00	4.159E+00	6.617E+00	PCI/SA		1.0	1.0E+0	3.324E-2
RA-226	BXTE	0		6/24/2006 1:26:00 PM	**1.6183E-01**	1.52E-01	1.53E-01	5.496E-01	PCI/SA		0.919	1.0E+0	2.511E-1
RA-228	BXTF	0		6/27/2006 6:50:33 AM	**7.1328E-01**	4.923E-01	5.638E-01	2.473E+00	PCI/SA		0.839	1.0E+0	2.511E-1
U-234	7YSR	0		6/29/2006 12:35:04	**2.2386E-01**	1.809E-01	1.818E-01	6.99E-01	PCI/SA		0.931	1.0E+0	3.262E-2
U-235	7YSR	0		6/29/2006 12:35:04	**-4.0701E-02**	2.878E-02	2.897E-02	5.75E-01	PCI/SA		0.931	1.0E+0	3.262E-2
U-238	7YSR	0		6/29/2006 12:35:04	**1.0176E-01**	1.509E-01	1.511E-01	7.489E-01	PCI/SA		0.931	1.0E+0	3.262E-2
31758	**9H571N10**			**J6E2503795**	000454	FILTER	5/25/2006 10:00:00	5/10/2006 12:05:00 PM					
ALPHA	BAS7	0		6/21/2006 9:37:56 AM	**7.6052E+00**	2.27E+00	2.401E+00	5.544E+00	PCI/SA		1.0	1.0E+0	2.088E-2
BETA	BDS8	0		6/20/2006 4:02:18 PM	**3.0106E+01**	2.462E+00	3.228E+00	6.611E+00	PCI/SA		1.0	1.0E+0	3.355E-2
RA-226	BXTE	0		6/24/2006 1:24:00 PM	**2.1868E-01**	1.766E-01	1.782E-01	6.226E-01	PCI/SA		0.862	1.0E+0	2.524E-1
RA-228	BXTF	0		6/27/2006 6:50:33 AM	**2.6251E+00**	6.435E-01	6.849E-01	2.471E+00	PCI/SA		0.787	1.0E+0	2.524E-1
U-234	7YSR	0		6/29/2006 12:35:14	**1.8871E-01**	1.979E-01	1.984E-01	8.759E-01	PCI/SA		0.971	1.0E+0	3.272E-2
U-235	7YSR	0		6/29/2006 12:35:14	**2.6413E-01**	1.645E-01	1.658E-01	4.518E-01	PCI/SA		0.971	1.0E+0	3.272E-2
U-238	7YSR	0		6/29/2006 12:35:14	**2.0754E-01**	1.677E-01	1.685E-01	6.479E-01	PCI/SA		0.971	1.0E+0	3.272E-2
31758	**9H571Q10**			**J6E2503796**	000455	FILTER	5/25/2006 10:00:00	5/10/2006 12:20:00 PM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**5.888E+00**	2.404E+00	2.481E+00	8.28E+00	PCI/SA		1.0	1.0E+0	2.091E-2
BETA	BDS8	0		6/20/2006 4:02:18 PM	**3.9594E+01**	2.647E+00	3.775E+00	6.341E+00	PCI/SA		1.0	1.0E+0	3.357E-2
RA-226	BXTE	0		6/24/2006 1:26:00 PM	**-9.0912E-02**	2.105E-01	2.108E-01	8.933E-01	PCI/SA		0.91	1.0E+0	2.503E-1
RA-228	BXTF	0		6/27/2006 6:50:33 AM	**1.8827E+00**	6.448E-01	6.583E-01	2.619E+00	PCI/SA		0.818	1.0E+0	2.503E-1
U-234	7YSR	0		6/29/2006 12:35:31	**0.0E+00**	0.0E+00	1.225E-01	2.71E-01	PCI/SA		0.961	1.0E+0	3.232E-2
U-235	7YSR	0		6/29/2006 12:35:31	**5.9966E-02**	1.039E-01	1.04E-01	5.651E-01	PCI/SA		0.961	1.0E+0	3.232E-2
U-238	7YSR	0		6/29/2006 12:35:31	**-2.0011E-02**	2.001E-02	2.008E-02	4.79E-01	PCI/SA		0.961	1.0E+0	3.232E-2
31758	**9H571R10**			**J6E2503797**	000456	FILTER	5/25/2006 10:00:00	5/10/2006 12:25:00 PM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**-5.3806E-01**	1.049E+00	1.05E+00	6.462E+00	PCI/SA		1.0	1.0E+0	2.082E-2
BETA	BDS8	0		6/20/2006 4:02:22 PM	**1.8366E+00**	1.466E+00	1.472E+00	6.221E+00	PCI/SA		1.0	1.0E+0	3.334E-2
RA-226	BXTE	0		6/24/2006 1:25:00 PM	**2.9856E-01**	2.182E-01	2.203E-01	7.57E-01	PCI/SA		1.008	1.0E+0	2.487E-1
RA-228	BXTF	0		6/27/2006 6:51:02 AM	**8.3436E-01**	4.436E-01	4.612E-01	1.968E+00	PCI/SA		0.879	1.0E+0	2.487E-1
U-234	7YSR	0		6/29/2006 12:35:41	**2.1873E-01**	1.547E-01	1.557E-01	2.964E-01	PCI/SA		0.914	1.0E+0	3.201E-2
U-235	7YSR	0		6/29/2006 12:35:41	**0.0E+00**	0.0E+00	1.339E-01	2.964E-01	PCI/SA		0.914	1.0E+0	3.201E-2
U-238	7YSR	0		6/29/2006 12:35:41	**8.7481E-02**	1.115E-01	1.118E-01	5.239E-01	PCI/SA		0.914	1.0E+0	3.201E-2
31758	**9H571T10**			**J6E2503798**	000457	FILTER	5/25/2006 10:00:00	5/10/2006 12:10:00 PM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**0.0E+00**	0.0E+00	1.22E+00	6.687E+00	PCI/SA		1.0	1.0E+0	2.083E-2
BETA	BDS8	0		6/20/2006 4:02:22 PM	**1.6761E+00**	1.28E+00	1.292E+00	5.419E+00	PCI/SA		1.0	1.0E+0	3.393E-2
RA-226	BXTE	0		6/24/2006 2:04:01 PM	**3.0013E-01**	1.81E-01	1.835E-01	6.023E-01	PCI/SA		0.989	1.0E+0	2.521E-1
RA-228	BXTF	0		6/27/2006 6:51:02 AM	**2.3461E+00**	5.319E-01	5.676E-01	1.821E+00	PCI/SA		0.857	1.0E+0	2.521E-1
U-234	7YSR	0		6/29/2006 12:35:57	**3.7687E-02**	9.98E-02	9.985E-02	5.953E-01	PCI/SA		0.976	1.0E+0	3.262E-2
U-235	7YSR	0		6/29/2006 12:35:57	**-1.887E-02**	1.887E-02	1.893E-02	4.517E-01	PCI/SA		0.976	1.0E+0	3.262E-2
U-238	7YSR	0		6/29/2006 12:35:57	**0.0E+00**	0.0E+00	1.155E-01	2.555E-01	PCI/SA		0.976	1.0E+0	3.262E-2
31758	**9H571V10**			**J6E2503799**	P-0621	FILTER	5/25/2006 10:00:00	5/10/2006 10:10:00 AM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**4.2238E+00**	1.84E+00	1.89E+00	6.065E+00	PCI/SA		1.0	1.0E+0	2.113E-2

6146431, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 50 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H6AT01AA=> , mat:FILTER | Air *wo:H6AT01AA=> , mat:FILTER | Air *wo:H6AT01AC=> , mat:FILTER | Air *wo:H6AT01AC=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes	
BETA	BDS8	0		6/20/2006 4:02:22 PM	**2.8114E+01**	2.298E+00	2.998E+00	6.19E+00	PCI/SA	1.0	1.0E+0	3.331E-2	
RA-226	BXTE	0		6/24/2006 2:02:00 PM	**1.716E-01**	2.16E-01	2.168E-01	7.836E-01	PCI/SA	0.962	1.0E+0	2.526E-1	
RA-228	BXTF	0		6/27/2006 6:51:02 AM	**2.0975E+00**	5.256E-01	5.522E-01	1.86E+00	PCI/SA	0.875	1.0E+0	2.526E-1	
U-234	7YSR	0		6/29/2006 12:36:07	**1.8889E-01**	1.499E-01	1.507E-01	5.027E-01	PCI/SA	0.937	1.0E+0	3.242E-2	
U-235	7YSR	0		6/29/2006 12:36:07	**0.0E+00**	0.0E+00	1.285E-01	2.844E-01	PCI/SA	0.937	1.0E+0	3.242E-2	
U-238	7YSR	0		6/29/2006 12:36:07	**1.0495E-01**	1.049E-01	1.053E-01	2.844E-01	PCI/SA	0.937	1.0E+0	3.242E-2	
31758	**9H571X10**			**J6E25037910**	P-0622	FILTER	5/25/2006 10:00:00	5/10/2006 10:30:00 AM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**6.6226E+00**	2.172E+00	2.277E+00	5.66E+00	PCI/SA	1.0	1.0E+0	2.046E-2	
BETA	BDS8	0		6/20/2006 4:02:22 PM	**2.6877E+01**	2.285E+00	2.952E+00	6.192E+00	PCI/SA	1.0	1.0E+0	3.167E-2	
RA-226	BXTE	0		6/24/2006 2:04:01 PM	**3.3431E-02**	1.685E-01	1.685E-01	6.735E-01	PCI/SA	0.868	1.0E+0	2.451E-1	
RA-228	BXTF	0		6/27/2006 6:51:02 AM	**6.8745E-01**	4.566E-01	4.762E-01	2.112E+00	PCI/SA	0.787	1.0E+0	2.451E-1	
U-234	7YSR	0		6/29/2006 12:36:18	**1.5973E-01**	1.44E-01	1.446E-01	5.642E-01	PCI/SA	1.002	1.0E+0	3.11E-2	
U-235	7YSR	0		6/29/2006 12:36:18	**7.9867E-02**	1.018E-01	1.02E-01	4.782E-01	PCI/SA	1.002	1.0E+0	3.11E-2	
U-238	7YSR	0		6/29/2006 12:36:18	**-3.9933E-02**	2.824E-02	2.842E-02	5.642E-01	PCI/SA	1.002	1.0E+0	3.11E-2	
31758	**H6AT01AB**			**J6E260000431**	INTRA-LAB BLANK	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM					
U-234	7YSR	0	B	6/29/2006 12:37:51	**1.3939E-02**	1.242E-02	1.247E-02	4.924E-02	PCI/SA	1.01	1.0E+0	1.0E+0	
U-235	7YSR	0	B	6/29/2006 12:37:51	**8.0153E-03**	8.74E-03	8.764E-03	3.507E-02	PCI/SA	1.01	1.0E+0	1.0E+0	
U-238	7YSR	0	B	6/29/2006 12:37:51	**0.0E+00**	0.0E+00	1.067E-02	2.361E-02	PCI/SA	1.01	1.0E+0	1.0E+0	
31758	**H6AT01CS**			**J6E260000431**	INTRA-LAB CHECK	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM					
U-234	7YSR	0	S	6/29/2006 12:38:01	**1.0412E+00**	8.613E-02	1.188E-01	4.014E-02	PCI/SA	9.7152E-01	0.93	1.0E+0	1.0E+0
U-238	7YSR	0	S	6/29/2006 12:38:01	**9.0198E-01**	8.004E-02	1.069E-01	1.925E-02	PCI/SA	1.0175E+00	0.93	1.0E+0	1.0E+0

6146431, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 50 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H6AT01AA=> , mat:FILTER | Air *wo:H6AT01AA=> , mat:FILTER | Air *wo:H6AT01AC=> , mat:FILTER | Air *wo:H6AT01AC=> , mat:FILTER | Air.

Batch Nbr: 6146431

Alpha Spec, Ulso by ALP , Results

6/29/2006 6:47:08 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	MLcC	MDC	QC	Yield	RYld
Ulso by ALP				Richland Standard AlpIso Wo Blk Subt.										
Calc	SR	FILTER	H57091AG	U-234	8.47E-01	(3.04E-01)		PCI/SA	R	1.45E-01	5.56E-01		105%	
Calc	SR	FILTER	H57091AG	U-235	7.88E-02	(1.01E-01)	U4	PCI/SA	R	1.02E-01	4.72E-01		105%	
Calc	SR	FILTER	H57091AG	U-238	7.48E-01	(2.86E-01)		PCI/SA	R	1.45E-01	5.56E-01		105%	
Calc	SR	FILTER	H571F1AG	U-234	9.98E-02	(1.00E-01)	U4	PCI/SA	R		2.70E-01		102%	
Calc	SR	FILTER	H571F1AG	U-235	7.98E-02	(1.02E-01)	U4	PCI/SA	R	1.04E-01	4.78E-01		102%	
Calc	SR	FILTER	H571F1AG	U-238	-3.32E-05	(1.09E-01)	U4	PCI/SA	R	2.32E-01	7.34E-01		102%	
Calc	SR	FILTER	H571G1AG	U-234	2.20E-02	(1.19E-01)	U4	PCI/SA	R	2.29E-01	7.56E-01		87%	
Calc	SR	FILTER	H571G1AG	U-235	1.76E-01	(1.59E-01)	U4	PCI/SA	R	1.62E-01	6.22E-01		87%	
Calc	SR	FILTER	H571G1AG	U-238	-8.80E-02	(4.46E-02)	U4	PCI/SA	R	2.29E-01	7.56E-01		87%	
Calc	SR	FILTER	H571M1AG	U-234	2.24E-01	(1.82E-01)	U4	PCI/SA	R	2.12E-01	6.99E-01		93%	
Calc	SR	FILTER	H571M1AG	U-235	-4.07E-02	(2.90E-02)	U4	PCI/SA	R	1.50E-01	5.75E-01		93%	
Calc	SR	FILTER	H571M1AG	U-238	1.02E-01	(1.51E-01)	U4	PCI/SA	R	2.37E-01	7.49E-01		93%	
Calc	SR	FILTER	H571N1AG	U-234	1.89E-01	(1.98E-01)	U4	PCI/SA	R	3.10E-01	8.76E-01		97%	
Calc	SR	FILTER	H571N1AG	U-235	2.64E-01	(1.66E-01)	U4	PCI/SA	R	9.81E-02	4.52E-01		97%	
Calc	SR	FILTER	H571N1AG	U-238	2.08E-01	(1.69E-01)	U4	PCI/SA	R	1.96E-01	6.48E-01		97%	
Calc	SR	FILTER	H571Q1AG	U-234	0.00E+00	(1.22E-01)	U4	PCI/SA	R		2.71E-01		96%	
Calc	SR	FILTER	H571Q1AG	U-235	6.00E-02	(1.04E-01)	U4	PCI/SA	R	1.47E-01	5.65E-01		96%	
Calc	SR	FILTER	H571Q1AG	U-238	-2.00E-02	(2.01E-02)	U4	PCI/SA	R	1.04E-01	4.79E-01		96%	
Calc	SR	FILTER	H571R1AG	U-234	2.19E-01	(1.56E-01)	U4	PCI/SA	R		2.96E-01		91%	
Calc	SR	FILTER	H571R1AG	U-235	0.00E+00	(1.34E-01)	U4	PCI/SA	R		2.96E-01		91%	
Calc	SR	FILTER	H571R1AG	U-238	8.75E-02	(1.12E-01)	U4	PCI/SA	R	1.14E-01	5.24E-01		91%	
Calc	SR	FILTER	H571T1AG	U-234	3.77E-02	(9.98E-02)	U4	PCI/SA	R	1.70E-01	5.95E-01		98%	
Calc	SR	FILTER	H571T1AG	U-235	-1.89E-02	(1.89E-02)	U4	PCI/SA	R	9.81E-02	4.52E-01		98%	
Calc	SR	FILTER	H571T1AG	U-238	0.00E+00	(1.15E-01)	U4	PCI/SA	R		2.56E-01		98%	
Calc	SR	FILTER	H571V1AG	U-234	1.89E-01	(1.51E-01)	U4	PCI/SA	R	1.09E-01	5.03E-01		94%	
Calc	SR	FILTER	H571V1AG	U-235	0.00E+00	(1.29E-01)	U4	PCI/SA	R		2.84E-01		94%	
Calc	SR	FILTER	H571V1AG	U-238	1.05E-01	(1.05E-01)	U4	PCI/SA	R		2.84E-01		94%	
Calc	SR	FILTER	H571X1AG	U-234	1.60E-01	(1.45E-01)	U4	PCI/SA	R	1.47E-01	5.64E-01		100%	
Calc	SR	FILTER	H571X1AG	U-235	7.99E-02	(1.02E-01)	U4	PCI/SA	R	1.04E-01	4.78E-01		100%	
Calc	SR	FILTER	H571X1AG	U-238	-3.99E-02	(2.84E-02)	U4	PCI/SA	R	1.47E-01	5.64E-01		100%	
Calc	SR	FILTER	H57101AG	U-234	9.87E+00	(1.43E+00)		PCI/SA	R	2.03E-01	7.79E-01		65%	
Calc	SR	FILTER	H57101AG	U-235	2.48E-01	(1.98E-01)	U4	PCI/SA	R	1.43E-01	6.60E-01		65%	
Calc	SR	FILTER	H57101AG	U-238	4.52E+00	(8.78E-01)		PCI/SA	R	1.43E-01	6.60E-01		65%	
Calc	SR	FILTER	H57111AG	U-234	7.96E-02	(1.02E-01)	U4	PCI/SA	R	1.04E-01	4.77E-01		98%	
Calc	SR	FILTER	H57111AG	U-235	0.00E+00	(1.22E-01)	U4	PCI/SA	R		2.70E-01		98%	
Calc	SR	FILTER	H57111AG	U-238	9.95E-02	(9.99E-02)	U4	PCI/SA	R		2.70E-01		98%	
Calc	SR	FILTER	H57121AG	U-234	7.43E-02	(1.11E-01)	U4	PCI/SA	R	1.44E-01	5.84E-01		88%	

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:51
RADCALC v4.8.18
STL Richland

Batch Nbr: 6146431

Alpha Spec, UIso by ALP , Results

6/29/2006 6:47:08 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	SR	FILTER	**H57121AG**	U-235	**-1.75E-02**	**(1.25E-02)**	**U4**	PCI/SA	R	1.02E-01	5.00E-01		88%	
Calc	SR	FILTER	**H57121AG**	U-238	**4.81E-02**	**(1.12E-01)**	**U4**	PCI/SA	R	1.90E-01	6.77E-01		88%	
Calc	SR	FILTER	**H57131AG**	U-234	**-4.75E-02**	**(2.16E-02)**	**U4**	PCI/SA	R	1.75E-01	6.71E-01		87%	
Calc	SR	FILTER	**H57131AG**	U-235	**-1.90E-02**	**(1.35E-02)**	**U4**	PCI/SA	R	1.11E-01	5.43E-01		87%	
Calc	SR	FILTER	**H57131AG**	U-238	**-3.80E-02**	**(1.93E-02)**	**U4**	PCI/SA	R	1.56E-01	6.34E-01		87%	
Calc	SR	FILTER	**H57141AG**	U-234	**-1.93E-02**	**(1.37E-02)**	**U4**	PCI/SA	R	1.12E-01	5.52E-01		86%	
Calc	SR	FILTER	**H57141AG**	U-235	**-1.93E-02**	**(1.37E-02)**	**U4**	PCI/SA	R	1.12E-01	5.52E-01		86%	
Calc	SR	FILTER	**H57141AG**	U-238	**0.00E+00**	**(1.48E-01)**	**U4**	PCI/SA	R		3.27E-01		86%	
Calc	SR	FILTER	**H6AT01AA**	U-234	**1.39E-02**	**(1.25E-02)**	**U4**	PCI/SA	R	1.28E-02	4.92E-02	**B**	101%	
Calc	SR	FILTER	**H6AT01AA**	U-235	**8.02E-03**	**(8.76E-03)**	**U4**	PCI/SA	R	5.73E-03	3.51E-02	**B**	101%	
Calc	SR	FILTER	**H6AT01AA**	U-238	**0.00E+00**	**(1.07E-02)**	**U4**	PCI/SA	R		2.36E-02	**B**	101%	
Calc	SR	FILTER	**H6AT01AC**	U-234	**1.04E+00**	**(1.19E-01)**		PCI/SA	R	1.05E-02	4.01E-02	**S**	93%	107%
Calc	SR	FILTER	**H6AT01AC**	U-235	**2.84E-02**	**(1.44E-02)**		PCI/SA	R		1.92E-02	**S**	93%	64%
Calc	SR	FILTER	**H6AT01AC**	U-238	**9.02E-01**	**(1.07E-01)**		PCI/SA	R		1.92E-02	**S**	93%	89%

PLandrum
6-29-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Page 2

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:68
RADCALC v4.8.18
STL Richland

Batch Nbr: 6146431

Alpha Spec, UIso by ALP , Calculated Results

6/29/2006 6:47:08 AM

Detailed Report

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H57091AG**	**PCI/SA**		05/10/06 10:20	06/29/06 00:34			1	1.00 SA	
536403,000450					,J6E250379-1 v4.8.18		FILTER					UITC15724 Alq		0.062503 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:54	U-232	773	13	ALP1	ED	Y	N	3.6576E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.2166			Y		(1.097E-02)						(0.000E+00)	15.999261		
1	06/28/06 22:54	U-234	9	2	ALP1	ED	N	N	3.6576E-01		N	105%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.2166			Y		(1.097E-02)			5%			(0.000E+00)	15.999261		
2	06/28/06 22:54	U-235	1	1	ALP1	ED	N	N	3.6576E-01		N	105%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.2166			Y		(1.097E-02)			5%			(0.000E+00)	15.999261		
3	06/28/06 22:54	U-238	8	2	ALP1	ED	N	N	3.6576E-01		N	105%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.2166			Y		(1.097E-02)			5%			(0.000E+00)	15.999261		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**75.860165**		3.85007E+00	10.526095	10.526095	1.00 SA	105%				
				(5.627621)		(1.3899E-01)	(0.494086)	(0.494086)	(0.028284)					
	06/29/06	U-234	R	**0.846819**		4.29779E-02	0.117502	0.117502	1.00 SA	105%		0.556479		
				(0.304356)		(1.5059E-02)	(0.041688)	(0.041688)	(0.028284)			0.144901		
	06/29/06	U-235	R	**0.078769**	**U4**	3.99772E-03	0.01093	0.01093	1.00 SA	105%		0.471649		
				(0.100617)		(5.0965E-03)	(0.013947)	(0.013947)	(0.028284)			0.10246		
	06/29/06	U-238	R	**0.74835**		3.79804E-02	0.103839	0.103839	1.00 SA	105%		0.556479		
				(0.286236)		(1.4206E-02)	(0.039267)	(0.039267)	(0.028284)			0.144901		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H571F1AG**	**PCI/SA**		05/10/06 10:35	06/29/06 00:34			1	1.00 SA	
536403,000451					,J6E250379-2 v4.8.18		FILTER					UITC15725 Alq		0.062322 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:54	U-232	744	16	ALP2	ED	Y	N	3.6206E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.1666			Y		(1.086E-02)						(0.000E+00)	16.045684		
1	06/28/06 22:54	U-234	1	0	ALP2	ED	N	N	3.6206E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.1666			Y		(1.086E-02)			5%			(0.000E+00)	16.045684		
2	06/28/06 22:54	U-235	1	1	ALP2	ED	N	N	3.6206E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.1666			Y		(1.086E-02)			5%			(0.000E+00)	16.045684		
3	06/28/06 22:54	U-238	1	5	ALP2	ED	N	N	3.6206E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.1666			Y		(1.086E-02)			5%			(0.000E+00)	16.045684		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:2

RADCALC v4.8.18

STL Richland

Batch Nbr: 6146431

Alpha Spec, UIso by ALP , Calculated Results

6/29/2006 6:47:09 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**73.906351**		3.70214E+00	10.225321	10.225321	1.00 SA	102%				
				(5.509318)		(1.3637E-01)	(0.485772)	(0.485772)	(0.028284)					
	06/29/06	U-234	R	**0.099766**	**U4**	4.99750E-03	0.013803	0.013803	1.00 SA	102%		0.270365		
				(0.100087)		(4.9975E-03)	(0.013825)	(0.013825)	(0.028284)					
	06/29/06	U-235	R	**0.079806**	**U4**	3.99767E-03	0.011042	0.011042	1.00 SA	102%		0.477867		
				(0.101945)		(5.0965E-03)	(0.01409)	(0.01409)	(0.028284)			0.103813		
	06/29/06	U-238	R	**-3.325E-05**	**U4**	-1.66556E-06	-4.6003E-06	-4.6003E-06	1.00 SA	102%		0.734353		
				(0.109294)		(5.4748E-03)	(0.015121)	(0.015121)	(0.028284)			0.232132		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H571G1AG**	**PCI/SA**		05/10/06 10:50	06/29/06 00:34			1	1.00 SA	
536403,000452					,J6E250379-3 v4.8.18		FILTER					UITC15726 Alq		0.062436 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:54	U-232	664	18	ALP3	ED	Y	N	3.7651E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.0833			Y		(1.130E-02)						(0.000E+00)	16.016513		
1	06/28/06 22:54	U-234	1	4	ALP3	ED	N	N	3.7651E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.0833			Y		(1.130E-02)			4%			(0.000E+00)	16.016513		
2	06/28/06 22:54	U-235	2	2	ALP3	ED	N	N	3.7651E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.0833			Y		(1.130E-02)			4%			(0.000E+00)	16.016513		
3	06/28/06 22:54	U-238	0	4	ALP3	ED	N	N	3.7651E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.0833			Y		(1.130E-02)			4%			(0.000E+00)	16.016513		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**63.262613**		3.30145E+00	8.768647	8.768647	1.00 SA	87%				
				(4.786326)		(1.2889E-01)	(0.431729)	(0.431729)	(0.028284)					
	06/29/06	U-234	R	**0.021996**	**U4**	9.99500E-04	0.003049	0.003049	1.00 SA	87%		0.755719		
				(0.118504)		(5.3843E-03)	(0.016425)	(0.016425)	(0.028284)			0.228926		
	06/29/06	U-235	R	**0.17602**	**U4**	7.99850E-03	0.024398	0.024398	1.00 SA	87%		0.621697		
				(0.159311)		(7.2099E-03)	(0.022037)	(0.022037)	(0.028284)			0.161875		
	06/29/06	U-238	R	**-0.088019**	**U4**	-3.99967E-03	-0.0122	-0.0122	1.00 SA	87%		0.755719		
				(0.044589)		(1.9998E-03)	(0.00614)	(0.00614)	(0.028284)			0.228926		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H571M1AG**	**PCI/SA**		05/10/06 11:25	06/29/06 00:35			1	1.00 SA	
536403,000453					,J6E250379-4 v4.8.18		FILTER					UITC15727 Alq		0.062617 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:55	U-232	713	6	ALP4	ED	Y	N	3.7951E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.0166			Y		(1.139E-02)						(0.000E+00)	15.969986		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.18

STL Richland

Batch Nbr: 6146431

Alpha Spec, UIso by ALP , Calculated Results

6/29/2006 6:47:09 AM

1	06/28/06 22:55	U-234	3	4	ALP4	ED	N	N	3.7951E-01	N	93%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200	1000.0166			Y		(1.139E-02)		4%		(0.000E+00)	15.969986	
2	06/28/06 22:55	U-235	0	2	ALP4	ED	N	N	3.7951E-01	N	93%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200	1000.0166			Y		(1.139E-02)		4%		(0.000E+00)	15.969986	
3	06/28/06 22:55	U-238	2	5	ALP4	ED	N	N	3.7951E-01	N	93%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200	1000.0166			Y		(1.139E-02)		4%		(0.000E+00)	15.969986	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**67.462082**		3.55900E+00	9.377965	9.377965	1.00 SA	93%				
				(5.051884)		(1.3353E-01)	(0.450507)	(0.450507)	(0.028284)					
	06/29/06	U-234	R	**0.22386**	**U4**	1.10001E-02	0.031119	0.031119	1.00 SA	93%		0.698953		
				(0.181781)		(8.8882E-03)	(0.025206)	(0.025206)	(0.028284)			0.211726		
	06/29/06	U-235	R	**-0.040701**	**U4**	-1.99997E-03	-0.005658	-0.005658	1.00 SA	93%		0.575001		
				(0.028967)		(1.4142E-03)	(0.004014)	(0.004014)	(0.028284)			0.149713		
	06/29/06	U-238	R	**0.101756**	**U4**	5.00008E-03	0.014145	0.014145	1.00 SA	93%		0.748905		
				(0.151148)		(7.4162E-03)	(0.020996)	(0.020996)	(0.028284)			0.236717		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H571N1AG**	**PCI/SA**		05/10/06 12:05	06/29/06 00:35			1	1.00 SA	
536403,000454					,J6E250379-5 v4.8.18		FILTER					UITC15728 Alq		0.062718 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:55	U-232	765	7	ALP5	ED	Y	N	3.9200E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.2333			Y		(1.176E-02)						(0.000E+00)	15.944415		
1	06/28/06 22:55	U-234	4	10	ALP5	ED	N	N	3.9200E-01		N	97%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.2333			Y		(1.176E-02)			5%			(0.000E+00)	15.944415		
2	06/28/06 22:55	U-235	3	1	ALP5	ED	N	N	3.9200E-01		N	97%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.2333			Y		(1.176E-02)			5%			(0.000E+00)	15.944415		
3	06/28/06 22:55	U-238	3	4	ALP5	ED	N	N	3.9200E-01		N	97%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.2333			Y		(1.176E-02)			5%			(0.000E+00)	15.944415		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**69.952259**		3.81800E+00	9.739722	9.739722	1.00 SA	97%				
				(5.193674)		(1.3832E-01)	(0.458126)	(0.458126)	(0.028284)					
	06/29/06	U-234	R	**0.188705**	**U4**	1.00023E-02	0.026274	0.026274	1.00 SA	97%		0.87589		
				(0.198442)		(1.0488E-02)	(0.027589)	(0.027589)	(0.028284)			0.310311		
	06/29/06	U-235	R	**0.26413**	**U4**	1.40002E-02	0.036776	0.036776	1.00 SA	97%		0.451777		
				(0.165825)		(8.7178E-03)	(0.022992)	(0.022992)	(0.028284)			0.098129		
	06/29/06	U-238	R	**0.207545**	**U4**	1.10009E-02	0.028897	0.028897	1.00 SA	97%		0.647919		
				(0.168505)		(8.8881E-03)	(0.023403)	(0.023403)	(0.028284)			0.196258		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:6

RADCALC v4.8.18

STL Richland

Batch Nbr: 6146431 — Alpha Spec, Uiso by ALP , Calculated Results — 6/29/2006 6:47:09 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H571Q1AG**	**PCI/SA**		05/10/06 12:20	06/29/06 00:35			1	1.00 SA	
536403,000455					,J6E250379-6 v4.8.18		FILTER					UITC15729 Alq		0.062315 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:55	U-232	725	4	ALP6	ED	Y	N	3.7594E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.15	1000.0666			Y		(1.128E-02)						(0.000E+00)	16.047464		
1	06/28/06 22:55	U-234	0	0	ALP6	ED	N	N	3.7594E-01		N	96%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.15	1000.0666			Y		(1.128E-02)			5%			(0.000E+00)	16.047464		
2	06/28/06 22:55	U-235	1	2	ALP6	ED	N	N	3.7594E-01		N	96%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.15	1000.0666			Y		(1.128E-02)			5%			(0.000E+00)	16.047464		
3	06/28/06 22:55	U-238	0	1	ALP6	ED	N	N	3.7594E-01		N	96%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.15	1000.0666			Y		(1.128E-02)			5%			(0.000E+00)	16.047464		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	iDC/iLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**69.572439**		3.61828E+00	9.624634	9.624634	1.00 SA	96%				
				(5.198261)		(1.3454E-01)	(0.459839)	(0.459839)	(0.028284)					
	06/29/06	U-234	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	96%		0.270968		
				(0.12246)		(0.0000E+00)	(0.016941)	(0.016941)	(0.028284)					
	06/29/06	U-235	R	**0.059966**	U4	2.99639E-03	0.008296	0.008296	1.00 SA	96%		0.565125		
				(0.104028)		(5.1925E-03)	(0.014383)	(0.014383)	(0.028284)			0.147166		
	06/29/06	U-238	R	**-0.020011**	U4	-9.99933E-04	-0.002768	-0.002768	1.00 SA	96%		0.478968		
				(0.020076)		(9.9993E-04)	(0.002773)	(0.002773)	(0.028284)			0.104062		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H571R1AG**	**PCI/SA**		05/10/06 12:25	06/29/06 00:35			1	1.00 SA	
536403,000456					,J6E250379-7 v4.8.18		FILTER					UITC15730 Alq		0.06201 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:55	U-232	668	4	ALP7	ED	Y	N	3.6324E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.05			Y		(1.090E-02)						(0.000E+00)	16.126451		
1	06/28/06 22:55	U-234	2	0	ALP7	ED	N	N	3.6324E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.05			Y		(1.090E-02)			4%			(0.000E+00)	16.126451		
2	06/28/06 22:55	U-235	0	0	ALP7	ED	N	N	3.6324E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.05			Y		(1.090E-02)			4%			(0.000E+00)	16.126451		
3	06/28/06 22:55	U-238	1	1	ALP7	ED	N	N	3.6324E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.05			Y		(1.090E-02)			4%			(0.000E+00)	16.126451		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:7 RADCALC v4.8.18 STL Richland

Batch Nbr: 6146431 — Alpha Spec, UIso by ALP , Calculated Results — 6/29/2006 6:47:09 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**66.680724**		3.33433E+00	9.179413	9.179413	1.00 SA	91%				
				(5.034708)		(1.2918E-01)	(0.449787)	(0.449787)	(0.028284)					
	06/29/06	U-234	R	**0.218727**	**U4**	9.99500E-03	0.03011	0.03011	1.00 SA	91%		0.296375		
				(0.155681)		(7.0675E-03)	(0.021361)	(0.021361)	(0.028284)					
	06/29/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	91%		0.296375		
				(0.133942)		(0.0000E+00)	(0.018439)	(0.018439)	(0.028284)					
	06/29/06	U-238	R	**0.087481**	**U4**	3.99755E-03	0.012043	0.012043	1.00 SA	91%		0.523851		
				(0.111757)		(5.0966E-03)	(0.015369)	(0.015369)	(0.028284)			0.113806		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H571T1AG**	**PCI/SA**		05/10/06 12:10	06/29/06 00:35			1	1.00 SA	
536403,000457					,J6E250379-8 v4.8.18		FILTER					UITC15731 Alq		0.062617 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:55	U-232	769	9	ALP8	ED	Y	N	3.9047E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0166			Y		(1.171E-02)						(0.000E+00)	15.970179		
1	06/28/06 22:55	U-234	1	3	ALP8	ED	N	N	3.9047E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0166			Y		(1.171E-02)			5%			(0.000E+00)	15.970179		
2	06/28/06 22:55	U-235	0	1	ALP8	ED	N	N	3.9047E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0166			Y		(1.171E-02)			5%			(0.000E+00)	15.970179		
3	06/28/06 22:55	U-238	0	0	ALP8	ED	N	N	3.9047E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0166			Y		(1.171E-02)			5%			(0.000E+00)	15.970179		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**70.630244**		3.83376E+00	9.818256	9.818256	1.00 SA	98%				
				(5.241466)		(1.3861E-01)	(0.461261)	(0.461261)	(0.028284)					
	06/29/06	U-234	R	**0.037687**	**U4**	1.99714E-03	0.005239	0.005239	1.00 SA	98%		0.595289		
				(0.099846)		(5.2887E-03)	(0.013876)	(0.013876)	(0.028284)			0.169972		
	06/29/06	U-235	R	**-0.01887**	**U4**	-9.99983E-04	-0.002623	-0.002623	1.00 SA	98%		0.451696		
				(0.01893)		(9.9998E-04)	(0.002627)	(0.002627)	(0.028284)			0.098134		
	06/29/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	98%		0.255545		
				(0.11549)		(0.0000E+00)	(0.016054)	(0.016054)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H571V1AG**	**PCI/SA**		05/10/06 10:10	06/29/06 00:36			1	1.00 SA	
536403,P-0621					,J6E250379-9 v4.8.18		FILTER					UITC15732 Alq		0.062424 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:56	U-232	692 ✓	2	ALP9	ED	Y	N	3.6670E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0333			Y		(1.100E-02)						(0.000E+00)	16.019397		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:9 RADCALC v4.8.18
STL Richland

Batch Nbr: 6146431 Alpha Spec, UIso by ALP , Calculated Results 6/29/2006 6:47:09 AM

1	06/28/06 22:56	U-234	2	1	ALP9	ED	N	N	3.6670E-01	N	94%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1166666	1000.0333			Y		(1.100E-02)		5%		(0.000E+00)	16.019397	
2	06/28/06 22:56	U-235	0	0	ALP9	ED	N	N	3.6670E-01	N	94%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1166666	1000.0333			Y		(1.100E-02)		5%		(0.000E+00)	16.019397	
3	06/28/06 22:56	U-238	1	0	ALP9	ED	N	N	3.6670E-01	N	94%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.1166666	1000.0333			Y		(1.100E-02)		5%		(0.000E+00)	16.019397	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**68.006351**		3.45598E+00	9.424465	9.424465	1.00 SA	94%				
				(5.110408)		(1.3146E-01)	(0.456569)	(0.456569)	(0.028284)					
	06/29/06	U-234	R	**0.188894**	U4	8.99420E-03	0.026177	0.026177	1.00 SA	94%		0.502712		
				(0.150674)		(7.1373E-03)	(0.020827)	(0.020827)	(0.028284)			0.109217		
	06/29/06	U-235	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	94%		0.284408		
				(0.128534)		(0.0000E+00)	(0.017813)	(0.017813)	(0.028284)					
	06/29/06	U-238	R	**0.104948**	U4	4.99709E-03	0.014544	0.014544	1.00 SA	94%		0.284408		
				(0.105291)		(4.9971E-03)	(0.014567)	(0.014567)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H571X1AG**	**PCI/SA**		05/10/06 10:30	06/29/06 00:36			1	1.00 SA	
536403,P-0622					,J6E250379-10 v4.8.18		FILTER					UITC15733 Alq		0.0611 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:56	U-232	745	7	ALP10	ED	Y	N	3.6914E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.25			Y		(1.107E-02)						(0.000E+00)	16.366664		
1	06/28/06 22:56	U-234	2	2	ALP10	ED	N	N	3.6914E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.25			Y		(1.107E-02)			5%			(0.000E+00)	16.366664		
2	06/28/06 22:56	U-235	1	1	ALP10	ED	N	N	3.6914E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.25			Y		(1.107E-02)			5%			(0.000E+00)	16.366664		
3	06/28/06 22:56	U-238	0	2	ALP10	ED	N	N	3.6914E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.25			Y		(1.107E-02)			5%			(0.000E+00)	16.366664		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**74.236346**		3.71707E+00	10.069545	10.069545	1.00 SA	100%				
				(5.529411)		(1.3646E-01)	(0.477412)	(0.477412)	(0.028284)					
	06/29/06	U-234	R	**0.159734**	U4	7.99800E-03	0.021667	0.021667	1.00 SA	100%		0.564152		
				(0.144552)		(7.2093E-03)	(0.019568)	(0.019568)	(0.028284)			0.146889		
	06/29/06	U-235	R	**0.079867**	U4	3.99900E-03	0.010833	0.010833	1.00 SA	100%		0.478158		
				(0.102013)		(5.0977E-03)	(0.013823)	(0.013823)	(0.028284)			0.103866		
	06/29/06	U-238	R	**-0.039933**	U4	-1.99950E-03	-0.005417	-0.005417	1.00 SA	100%		0.564152		
				(0.028419)		(1.4139E-03)	(0.003842)	(0.003842)	(0.028284)			0.146889		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:11 RADCALC v4.8.18
STL Richland

Batch Nbr: 6146431 — Alpha Spec, UIso by ALP , Calculated Results — 6/29/2006 6:47:10 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H57101AG**	**PCI/SA**		05/10/06 10:45	06/29/06 00:36			1	1.00 SA	
536403,P-0623					,J6E250379-11 v4.8.18		FILTER					UITC15734 Alq		0.061758 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:56	U-232	531	8	ALP11	ED	Y	N	4.0933E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.2			Y		(1.228E-02)						(0.000E+00)	16.192248		
1	06/28/06 22:56	U-234	72	2	ALP11	ED	N	N	4.0933E-01		N	65%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.2			Y		(1.228E-02)			3%			(0.000E+00)	16.192248		
2	06/28/06 22:56	U-235	2	1	ALP11	ED	N	N	4.0933E-01		N	65%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.2			Y		(1.228E-02)			3%			(0.000E+00)	16.192248		
3	06/28/06 22:56	U-238	33	1	ALP11	ED	N	N	4.0933E-01		N	65%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.2			Y		(1.228E-02)			3%			(0.000E+00)	16.192248		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**47.142615**		2.64567E+00	6.463383	6.463383	1.00 SA	65%				
				(3.680684)		(1.1519E-01)	(0.341753)	(0.341753)	(0.028284)					
	06/29/06	U-234	R	**9.868266**		3.57820E-01	1.352966	1.352966	1.00 SA	65%		0.7789		
				(1.431954)		(4.2429E-02)	(0.180285)	(0.180285)	(0.028284)			0.202817		
	06/29/06	U-235	R	**0.248077**	**U4**	8.99520E-03	0.034012	0.034012	1.00 SA	65%		0.660162		
				(0.197945)		(7.1379E-03)	(0.027068)	(0.027068)	(0.028284)			0.143413		
	06/29/06	U-238	R	**4.520656**		1.63918E-01	0.619794	0.619794	1.00 SA	65%		0.660162		
				(0.877833)		(2.8726E-02)	(0.114966)	(0.114966)	(0.028284)			0.143413		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H57111AG**	**PCI/SA**		05/10/06 11:20	06/29/06 00:36			1	1.00 SA	
536403,P-0624					,J6E250379-12 v4.8.18		FILTER					UITC15735 Alq		0.062846 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:56	U-232	726	12	ALP12	ED	Y	N	3.6724E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.1333			Y		(1.102E-02)						(0.000E+00)	15.911848		
1	06/28/06 22:56	U-234	1	1	ALP12	ED	N	N	3.6724E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.1333			Y		(1.102E-02)			5%			(0.000E+00)	15.911848		
2	06/28/06 22:56	U-235	0	0	ALP12	ED	N	N	3.6724E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.1333			Y		(1.102E-02)			5%			(0.000E+00)	15.911848		
3	06/28/06 22:56	U-238	1	0	ALP12	ED	N	N	3.6724E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.1333			Y		(1.102E-02)			5%			(0.000E+00)	15.911848		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:12 RADCALC v4.8.18
STL Richland

Batch Nbr: 6146431

Alpha Spec, Uiso by ALP , Calculated Results

6/29/2006 6:47:10 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**70.606926**		3.61770E+00	9.850995	9.850995	1.00 SA	98%				
				(5.277828)		(1.3476E-01)	(0.471149)	(0.471149)	(0.028284)					
	06/29/06	U-234	R	**0.07963**	U4	3.99972E-03	0.01111	0.01111	1.00 SA	98%		0.476727		
				(0.101709)		(5.0986E-03)	(0.014176)	(0.014176)	(0.028284)			0.103554		
	06/29/06	U-235	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	98%		0.269743		
				(0.121906)		(0.0000E+00)	(0.017008)	(0.017008)	(0.028284)					
	06/29/06	U-238	R	**0.099536**	U4	4.99958E-03	0.013887	0.013887	1.00 SA	98%		0.269743		
				(0.099858)		(4.9996E-03)	(0.013909)	(0.013909)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H57121AG**	**PCI/SA**		05/10/06 12:00	06/29/06 00:37			1	1.00 SA	
536403,P-0625					,J6E250379-13 v4.8.18		FILTER					UITC15736 Alq		0.062546 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:57	U-232	661	25	ALP69	ED	Y	N	3.7411E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	2500.0166			Y		(1.122E-02)						(0.000E+00)	15.988199		
1	06/28/06 22:57	U-234	1	4	ALP69	ED	N	N	3.7411E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	2500.0166			Y		(1.122E-02)			4%			(0.000E+00)	15.988199		
2	06/28/06 22:57	U-235	0	2	ALP69	ED	N	N	3.7411E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	2500.0166			Y		(1.122E-02)			4%			(0.000E+00)	15.988199		
3	06/28/06 22:57	U-238	1	7	ALP69	ED	N	N	3.7411E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	2500.0166			Y		(1.122E-02)			4%			(0.000E+00)	15.988199		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**63.420246**		3.29445E+00	8.806063	8.806063	1.00 SA	88%				
				(4.797534)		(1.2854E-01)	(0.433418)	(0.433418)	(0.028284)					
	06/29/06	U-234	R	**0.07435**	U4	3.39918E-03	0.010324	0.010324	1.00 SA	88%		0.58398		
				(0.110903)		(5.0628E-03)	(0.015388)	(0.015388)	(0.028284)			0.143911		
	06/29/06	U-235	R	**-0.017498**	U4	-7.99995E-04	-0.00243	-0.00243	1.00 SA	88%		0.499729		
				(0.012455)		(5.6568E-04)	(0.001724)	(0.001724)	(0.028284)			0.101761		
	06/29/06	U-238	R	**0.048103**	U4	2.19919E-03	0.006679	0.006679	1.00 SA	88%		0.676856		
				(0.111838)		(5.1100E-03)	(0.015524)	(0.015524)	(0.028284)			0.190377		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H57131AG**	**PCI/SA**		05/10/06 12:15	06/29/06 00:37			1	1.00 SA	
536403,P-0626					,J6E250379-14 v4.8.18		FILTER					UITC15737 Alq		0.06266 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:57	U-232	610	20	ALP83	ED	Y	N	3.4771E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	2500.0333			Y		(1.043E-02)						(0.000E+00)	15.959025		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:14 RADCALC v4.8.18

STL Richland

Batch Nbr: 6146431 Alpha Spec, UIso by ALP , Calculated Results 6/29/2006 6:47:10 AM

1	06/28/06 22:57	U-234	0	5	ALP83	ED	N	N	3.4771E-01	N	87%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.0666666	2500.0333			Y		(1.043E-02)		4%		(0.000E+00)	15.959025	
2	06/28/06 22:57	U-235	0	2	ALP83	ED	N	N	3.4771E-01	N	87%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.0666666	2500.0333			Y		(1.043E-02)		4%		(0.000E+00)	15.959025	
3	06/28/06 22:57	U-238	0	4	ALP83	ED	N	N	3.4771E-01	N	87%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.0666666	2500.0333			Y		(1.043E-02)		4%		(0.000E+00)	15.959025	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**62.871805**		3.04098E+00	8.745869	8.745869	1.00 SA	87%				
				(4.808081)		(1.2346E-01)	(0.4415)	(0.4415)	(0.028284)					
	06/29/06	U-234	R	**-0.047527**	**U4**	-1.99997E-03	-0.006611	-0.006611	1.00 SA	87%		0.671275		
				(0.021611)		(8.9442E-04)	(0.002982)	(0.002982)	(0.028284)			0.174794		
	06/29/06	U-235	R	**-0.019011**	**U4**	-7.99989E-04	-0.002645	-0.002645	1.00 SA	87%		0.542862		
				(0.013533)		(5.6568E-04)	(0.001876)	(0.001876)	(0.028284)			0.110549		
	06/29/06	U-238	R	**-0.038022**	**U4**	-1.59998E-03	-0.005289	-0.005289	1.00 SA	87%		0.63439		
				(0.019266)		(7.9999E-04)	(0.002663)	(0.002663)	(0.028284)			0.15634		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H57141AG**	**PCI/SA**		05/10/06 10:15	06/29/06 00:37			1	1.00 SA	
536403,P-0627					,J6E250379-15 v4.8.18		FILTER					UITC15738 Alq		0.062372 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:57	U-232	600	11	ALP84	ED	Y	N	3.4843E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	2500.15			Y		(1.045E-02)						(0.000E+00)	16.032725		
1	06/28/06 22:57	U-234	0	2	ALP84	ED	N	N	3.4843E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	2500.15			Y		(1.045E-02)			4%			(0.000E+00)	16.032725		
2	06/28/06 22:57	U-235	0	2	ALP84	ED	N	N	3.4843E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	2500.15			Y		(1.045E-02)			4%			(0.000E+00)	16.032725		
3	06/28/06 22:57	U-238	0	0	ALP84	ED	N	N	3.4843E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	2500.15			Y		(1.045E-02)			4%			(0.000E+00)	16.032725		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**62.084536**		2.99535E+00	8.596655	8.596655	1.00 SA	86%				
				(4.757378)		(1.2247E-01)	(0.435958)	(0.435958)	(0.028284)					
	06/29/06	U-234	R	**-0.019313**	**U4**	-7.99952E-04	-0.002674	-0.002674	1.00 SA	86%		0.551623		
				(0.013749)		(5.6565E-04)	(0.001898)	(0.001898)	(0.028284)			0.112323		
	06/29/06	U-235	R	**-0.019313**	**U4**	-7.99952E-04	-0.002674	-0.002674	1.00 SA	86%		0.551622		
				(0.013749)		(5.6565E-04)	(0.001898)	(0.001898)	(0.028284)			0.112323		
	06/29/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	86%		0.327109		
				(0.147832)		(0.0000E+00)	(0.02047)	(0.02047)	(0.028284)					

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16 RADCALC v4.8.18
STL Richland

Batch Nbr: 6146431 — Alpha Spec, UIso by ALP , Calculated Results — 6/29/2006 6:47:10 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H6AT01AA**	**PCI/SA**	**B**	05/10/06 10:20	06/29/06 00:37			1	1.00 SA	
0,INTRA-LAB BLANK					,J6E260000-431		FILTER					UITC15739 Alq		1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:57	U-232	528	45	ALP85	ED	Y	N	2.5840E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	2500.1166			Y		(7.752E-03)						(0.000E+00)	1.00		
1	06/28/06 22:57	U-234	2	5	ALP85	ED	N	N	2.5840E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	2500.1166			Y		(7.752E-03)			5%			(0.000E+00)	1.00		
2	06/28/06 22:57	U-235	1	1	ALP85	ED	N	N	2.5840E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	2500.1166			Y		(7.752E-03)			5%			(0.000E+00)	1.00		
3	06/28/06 22:57	U-238	0	0	ALP85	ED	N	N	2.5840E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	2500.1166			Y		(7.752E-03)			5%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/iLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**4.568864**		2.62090E+00	10.142888	10.142888	1.00 SA	101%				
				(0.342546)		(1.1487E-01)	(0.538729)	(0.538729)	(0.017321)					
	06/29/06	U-234	R	**0.013939**	**U4**	7.99593E-03	0.030944	0.030944	1.00 SA	101%		0.049239		
				(0.012471)		(7.1245E-03)	(0.027636)	(0.027636)	(0.017321)			0.012821		
	06/29/06	U-235	R	**0.008015**	**U4**	4.59794E-03	0.017794	0.017794	1.00 SA	101%		0.035072		
				(0.008764)		(5.0139E-03)	(0.019434)	(0.019434)	(0.017321)			0.005734		
	06/29/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	101%		0.023611		
				(0.010671)		(0.0000E+00)	(0.023689)	(0.023689)	(0.017321)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
17	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H6AT01AC**	**PCI/SA**	**S**	05/10/06 10:20	06/29/06 00:38		UISF0456	1	1.00 SA	
0,INTRA-LAB CHECK					,J6E260000-431		FILTER					UISF0456 Alq		1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 22:57	U-232	635	7	ALP87	ED	Y	N	3.4106E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0166			Y		(1.023E-02)						(0.000E+00)	1.00		
1	06/28/06 22:57	U-234	147	2	ALP87	ED	N	N	3.4106E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0166			Y		(1.023E-02)			5%			(0.000E+00)	1.00		
2	06/28/06 22:57	U-235	4	0	ALP87	ED	N	N	3.4106E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0166			Y		(1.023E-02)			5%			(0.000E+00)	1.00		
3	06/28/06 22:57	U-238	127	0	ALP87	ED	N	N	3.4106E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0166			Y		(1.023E-02)			5%			(0.000E+00)	1.00		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17 RADCALC v4.8.18 STL Richland

Batch Nbr: 6146431

Alpha Spec, Uiso by ALP , Calculated Results

6/29/2006 6:47:11 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**4.182991**		3.16721E+00	9.28625	9.28625	1.00 SA	93%				
				(0.304022)		(1.2599E-01)	(0.462682)	(0.462682)	(0.017321)					
	06/29/06	U-234	R	**1.041184**		7.32816E-01	2.311429	2.311429	1.00 SA	93%	107%	0.040136		
				(0.118833)		(6.0623E-02)	(0.233742)	(0.233742)	(0.017321)			0.010451		
	06/29/06	U-235	R	**0.028409**		1.99950E-02	0.063068	0.063068	1.00 SA	93%	64%	0.019247		
				(0.014379)		(9.9975E-03)	(0.031746)	(0.031746)	(0.017321)					
	06/29/06	U-238	R	**0.901981**		6.34841E-01	2.002399	2.002399	1.00 SA	93%	89%	0.019247		
				(0.106939)		(5.6333E-02)	(0.212448)	(0.212448)	(0.017321)					

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17

RADCALC v4.8.18

STL Richland

SEVERN TRENT STL

URANIUM ISOTOPIC COUNTING REQUEST

6/29
0217

C.R. Technician OD

Date Counted 6/28/06

Counting Time
Sample 200 Minutes
Background See Alpha Regions Report
BRC 5/10/06

SOP's
Operating: RICHRD008
Review: RICHRD0016
6146431

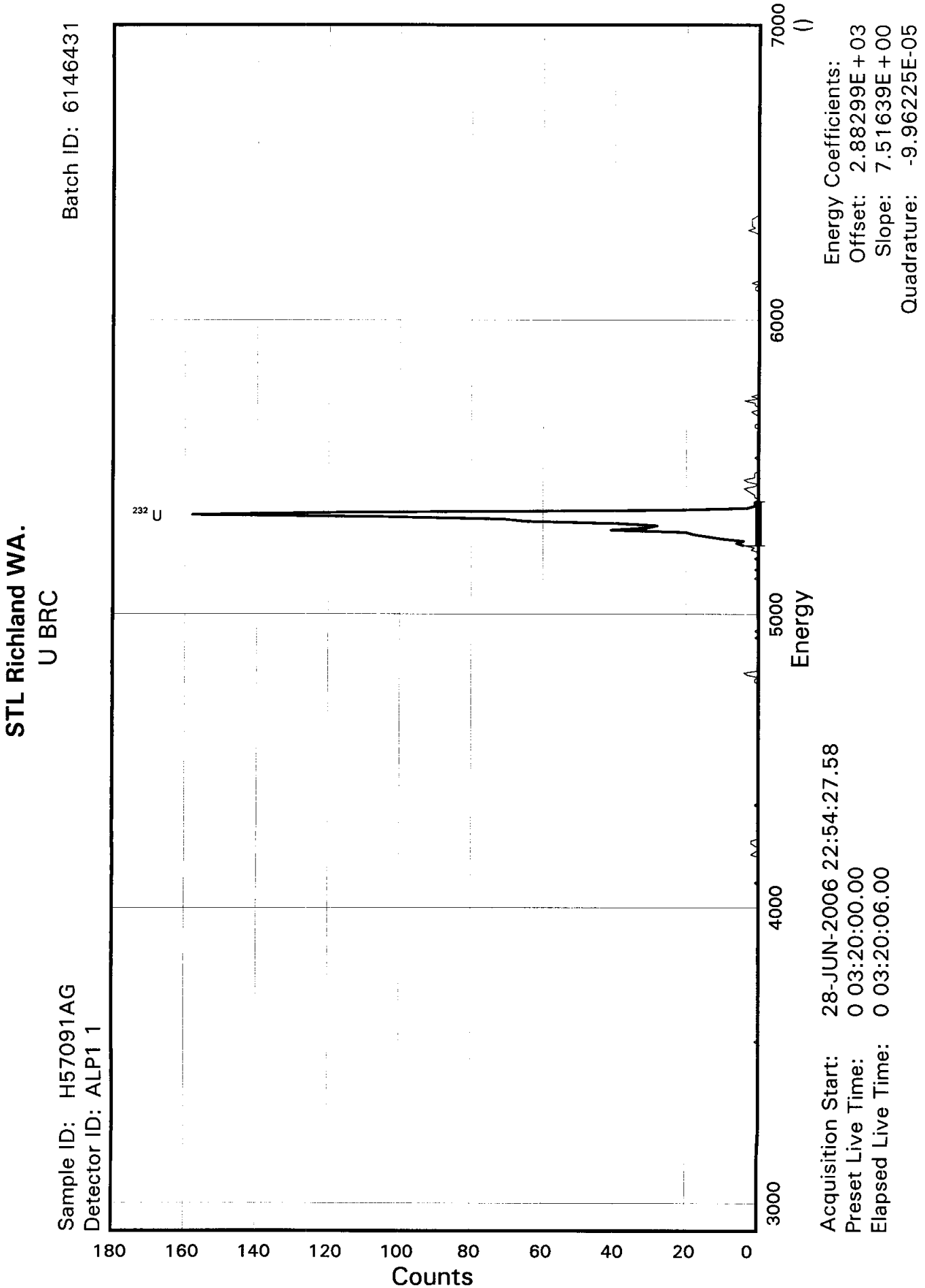
WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H57091AG	See Counting Room Printout for ROI information				1	
H571F1AG	See Counting Room Printout for ROI information				2	
H571G1AG	See Counting Room Printout for ROI information				3	
H571M1AG	See Counting Room Printout for ROI information				4	
H571N1AG	See Counting Room Printout for ROI information				5	
H571Q1AG	See Counting Room Printout for ROI information				6	
H571R1AG	See Counting Room Printout for ROI information				7	
H571T1AG	See Counting Room Printout for ROI information				8	
	See Counting Room Printout for ROI information					

Comments:

Form No: RC-011, 7/02, Rev 8

Approved by: S

Date: 6/29/06


STL Richland WA.
U BRC
Batch ID: 6146431
Sample ID: H57091AG
Detector ID: ALP1 1
232 U
Counts
Energy
180
160
140
120
100
80
60
40
20
0
3000
4000
5000
6000
7000
()
Acquisition Start: 28-JUN-2006 22:54:27.58
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:06.00
Energy Coefficients:
Offset: 2.88299E+03
Slope: 7.51639E+00
Quadrature: -9.96225E-05

SAMPLE IDENTIITY: H57091AG

TITLE : U BRC

DETECTOR : ALP1 1
CONFIGURATION NAME : $DISK1:[ALP1.SAMPLE]H57091AG_280662254.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:26:49

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:54:27 CALIB DATE : 01-JUN-2006 23:52:47

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:06

OFFSET : 2882.99 keV CONSTANT FWHM : 8.50000 Channels
SLOPE : 7.51639 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.996225E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H57091AG

Detector: ALP1 1
Report Date: 29-Jun-06 02:14 AM
Acquire Date: 28-JUN-2006 22:54:27.58
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	773	13	0	3.850	5333.7	149.0	314	334	0.00	0.00	P
U-234	9	2	0	0.043	4788.2	149.3	241	261	0.00	0.00	
U-235	1	1	0	0.004	4411.4	149.5	190	210	0.00	0.00	
U-238	8	2	0	0.038	4211.6	149.6	164	184	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H57091AG
Detector: ALP1 1
Report Date: 29-Jun-06 02:14 AM
Acquire Date: 28-JUN-2006 22:54:27.58

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	1	+	252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	1	+	253	1		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	1		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	3	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	4	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	1		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	1		308	0		358	0		408	3		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	1		459	0		509
0		10	0		60	0		110	1		160	0	+	210	0	+	260	0		310	0		360	0		410	2		460	0		510
0		11	0		61	0		111	0		161	0		211	0	+	261	0		311	0		361	0		411	2		461	0		511
0		12	0		62	0		112	0		162	0		212	0		262	2		312	0		362	0		412	2		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	1		313	0		363	0		413	2		463			
0		14	0		64	0		114	0	+	164	0		214	0		264	4	+	314	0		364	0		414	1		464			
0		15	0		65	0		115	0	+	165	0		215	0		265	6	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0		216	0		266	4	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0		217	0		267	10	+	317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	14	+	318	1		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	18	+	319	1		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	20	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	41	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	1		272	31	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	2	+	173	0		223	0		273	28	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	1	+	174	0		224	0		274	39	+	324	1		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	1		275	65	+	325	2		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	71	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	1	+	177	0		227	0		277	104	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	2	+	178	0		228	0		278	158	+	328	1		378	0		428	0		478			
0		29	0		79	0		129	2	+	179	0		229	0		279	117	+	329	1		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	25	+	330	4		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	3	+	331	0		381	1		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	1	+	332	2		382	1		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	1	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	1		334	0		384	2		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	0		335	0		385	0		435	0		485			
0		36	0		86	0		136	0		186	0		236	0		286	1		336	0		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	1		337	0		387	0		437	0		487			
0		38	1		88	0		138	0		188	0		238	0		288	2		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	3		339	0		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	4		340	0		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0	+	241	0		291	1		341	0		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0	+	242	0		292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0	+	243	0		293	3		343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0	+	244	0		294	4		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0	+	245	0		295	1		345	0		395	0		445	0		495			
0		46	0		96	0		146	1	+	196	0	+	246	0		296	1		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	1		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	1		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:14:50

```
Configuration     : $DISK1:[ALP1.SAMPLE]H57091AG_280662254.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:54:27
Sample ID         : H57091AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP1                 Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:06.00   0.0%
Start energy      :  2905.54             End energy       :  6705.26
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5333.74	773	0	45.10	327.48	314	20	6.44E-02	3.6	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 02:14:55

```
Configuration     : $DISK1:[ALP1.SAMPLE]H57091AG_280662254.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:54:27
Sample ID         : H57091AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP1                 Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:06.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			
	Grand Total Activity :		0.000E+00	0.000E+00			

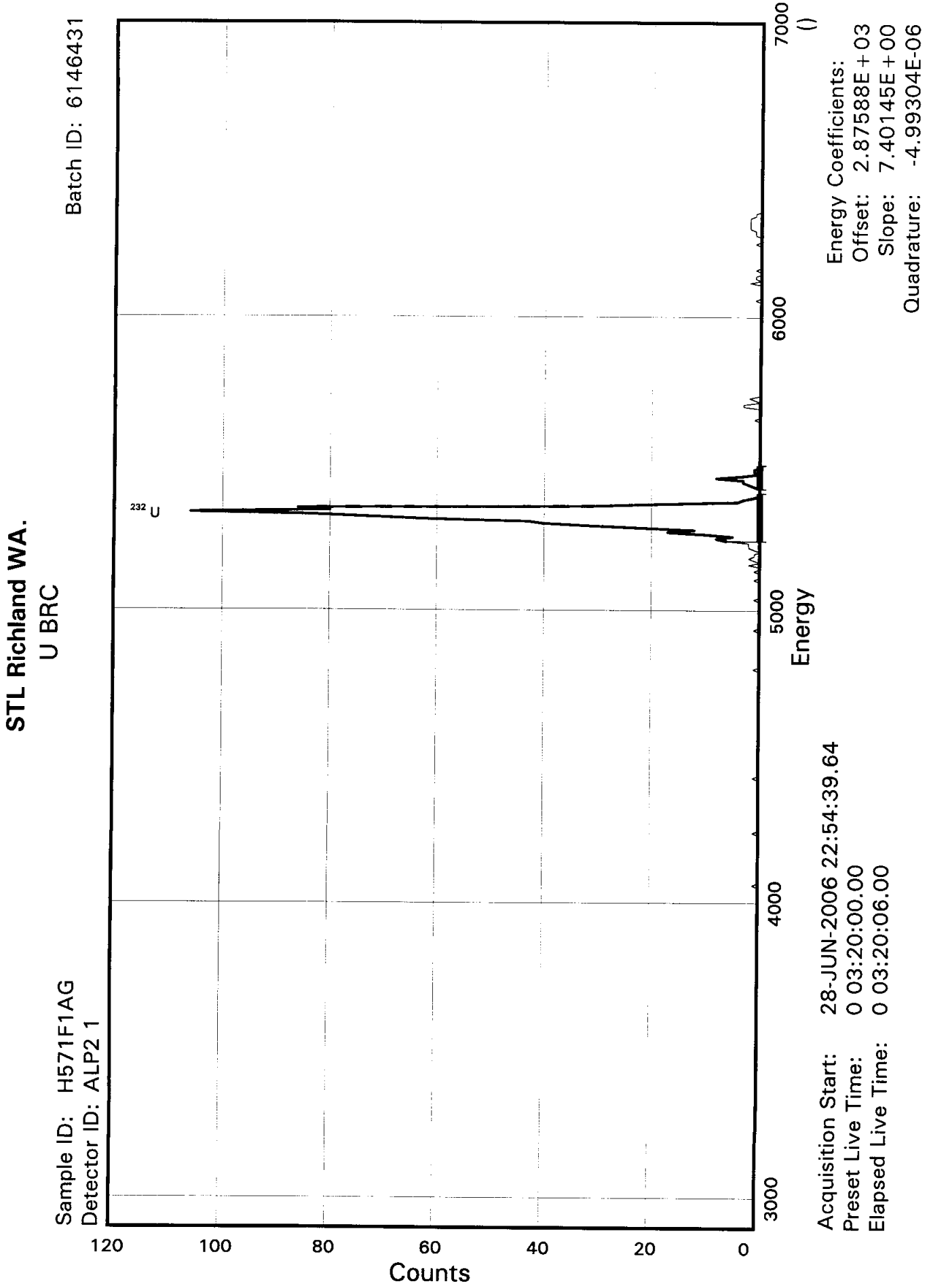
Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP1.SAMPLE]H57091AG_280662254.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.73	314	334	773	761	0.43		

End of Report


STL Richland WA.
U BRC
Batch ID: 6146431
Sample ID: H571F1AG
Detector ID: ALP2 1
232 U
Counts
120
100
80
60
40
20
0
3000
4000
5000
6000
7000
Energy
()
Energy Coefficients:
Offset: 2.87588E+03
Slope: 7.40145E+00
Quadrature: -4.99304E-06
Acquisition Start: 28-JUN-2006 22:54:39.64
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:06.00

SAMPLE IDENTIITY: H571F1AG

TITLE : U BRC

DETECTOR : ALP2 1
CONFIGURATION NAME : $DISK1:[ALP2.SAMPLE]H571F1AG_280662254.CNF;1

ACQUIRE DATE of BACKGROUND: 03-JUN-2006 09:55:02

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:54:39 CALIB DATE : 02-JUN-2006 00:12:34

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:06

OFFSET : 2875.88 keV CONSTANT FWHM : 9.50000 Channels
SLOPE : 7.40145 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.499304E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571F1AG

Detector: ALP2 1
Report Date: 29-Jun-06 02:45 AM
Acquire Date: 28-JUN-2006 22:54:39.64
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	744	16	0	3.702	5326.9	162.8	319	341	0.00	0.00	P
U-234	1	0	0	0.005	4781.3	162.8	245	267	0.00	0.00	
U-235	1	1	0	0.004	4404.5	162.8	194	216	0.00	0.00	
U-238	1	5	0	0.000	4204.7	162.8	167	189	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571F1AG
Detector: ALP2 1
Report Date: 29-Jun-06 02:45 AM
Acquire Date: 28-JUN-2006 22:54:39.64

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	1		301	1		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	1		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	1		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	1		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	2		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	1		160	1	+	210	1	+	260	1		310	0		360	0		410	1		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	2		311	0		361	0		411	1		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	1		312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	1		313	0		363	0		413	2		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	0		314	0		364	0		414	2		464			
0		15	0		65	0		115	0		165	0	+	215	0	+	265	1		315	0		365	0		415	2		465			
0		16	0		66	0		116	0		166	0	+	216	0	+	266	2		316	0		366	0		416	2		466			
0		17	0		67	0		117	0	+	167	0		217	0	+	267	2		317	0		367	0		417	2		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	2		318	0		368	0		418	2		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	6	+	319	0		369	0		419	1		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	8	+	320	0		370	0		420	1		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	5	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	10	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	17	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	12	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	22	+	325	1		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	32	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	40	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	1		278	43	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	62	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	73	+	330	0		380	1		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	84	+	331	3		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	106	+	332	3		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	80	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	1	+	184	0		234	0		284	86	+	334	1		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	31	+	335	2		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	19	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	4	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	3	+	338	0		388	2		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	1	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	0	+	340	0		390	1		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	0		341	0		391	1		441	0		491			
0		42	0		92	0		142	0		192	0		242	1		292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	0		343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	1		344	0		394	1		444	0		494			
0		45	0		95	0		145	0	+	195	0	+	245	0		295	2		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	3		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	3		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	8		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	3		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:45:46

```
Configuration     : $DISK1:[ALP2.SAMPLE]H571F1AG_280662254.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:54:39
Sample ID         : H571F1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP2                 Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:50:49.00    13%
Start energy      :  2898.09             End energy       :  6664.12
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5326.89	744	0	51.81	331.23	319	22	6.20E-02	3.7	
2	0	5444.46	21	0	37.01	347.12	343	11	1.75E-03	21.8	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 02:45:50

```
Configuration     : $DISK1:[ALP2.SAMPLE]H571F1AG_280662254.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:54:39
Sample ID         : H571F1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP2                 Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:50:49.00    13%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP2.SAMPLE]H571F1AG_280662254.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5326.88	319	341	744	744	0.00		
5444.45	343	354	21	22	-0.22		

End of Report

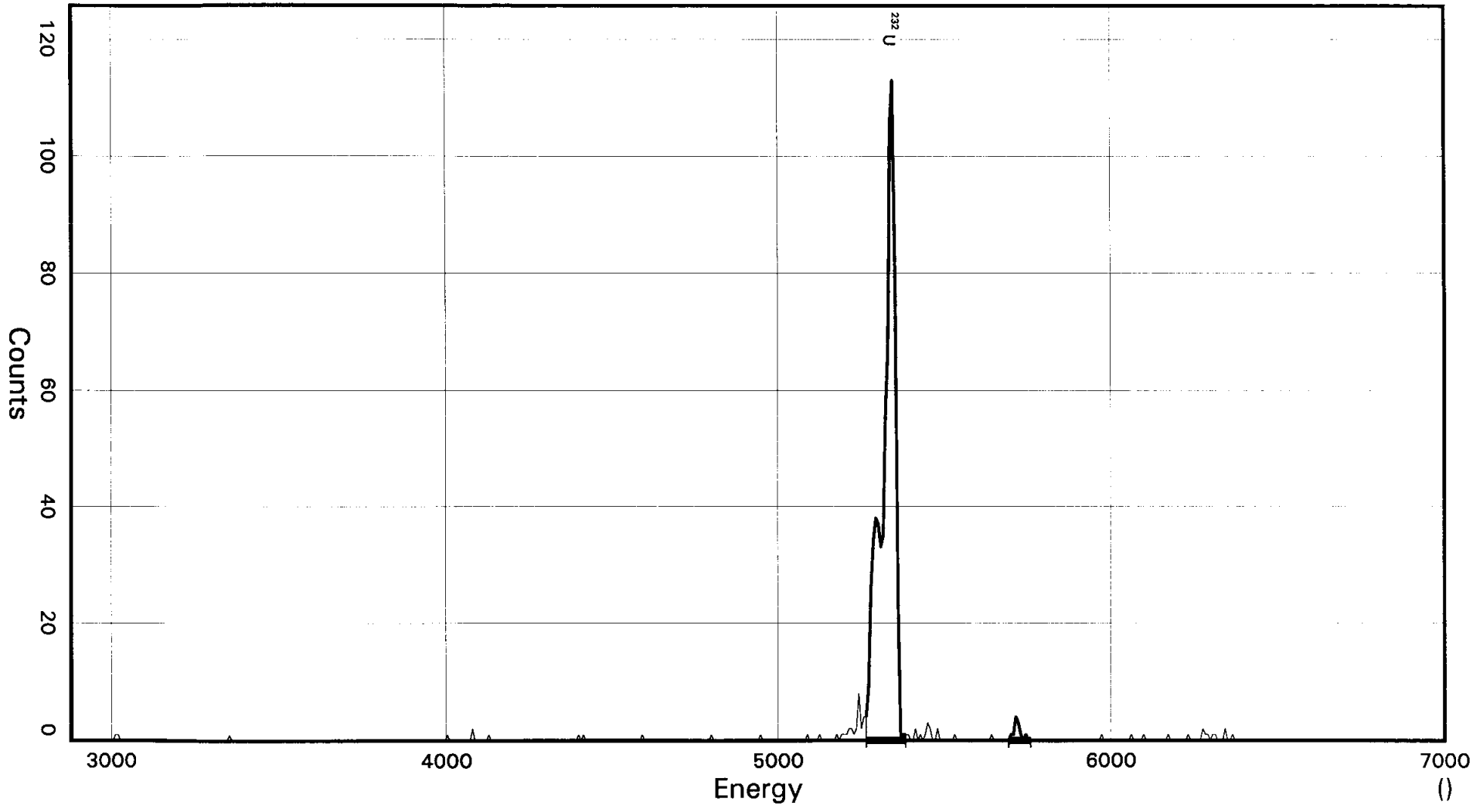
STL Richland WA.

U BRC

Sample ID: H571G1AG

Detector ID: ALP3 1

Batch ID: 6146431



Acquisition Start: 28-JUN-2006 22:54:49.96

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:02.00

Energy Coefficients:

Offset: 2.85788E+03

Slope: 7.33691E+00

Quadrature: 5.98118E-05

SAMPLE IDENTIITY: H571G1AG

TITLE : U BRC

DETECTOR : ALP3 1
CONFIGURATION NAME : $DISK1:[ALP3.SAMPLE]H571G1AG_280662254.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:26:57

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:54:49 CALIB DATE : 01-JUN-2006 23:53:16

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:02

OFFSET : 2857.88 keV CONSTANT FWHM : 8.33333 Channels
SLOPE : 7.33691 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : 5.981180E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571G1AG

Detector: ALP3 1
Report Date: 29-Jun-06 02:15 AM
Acquire Date: 28-JUN-2006 22:54:49.96
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	664	18	0	3.301	5338.3	118.0	327	343	0.00	0.00	P
U-234	1	4	0	0.001	4792.7	117.9	253	269	0.00	0.00	
U-235	2	2	0	0.008	4415.9	117.8	202	218	0.00	0.00	
U-238	0	4	0	-0.004	4216.1	117.7	175	191	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571G1AG
Detector: ALP3 1
Report Date: 29-Jun-06 02:15 AM
Acquire Date: 28-JUN-2006 22:54:49.96

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1		0	51		0	101		0	151		0	201		0	251		0	301		1	351		0	401		0	451		0	501
		2		0	52		0	102		0	152		0+	202		0	252		0	302		3	352		0	402		0	452		0	502
	0	3		0	53		0	103		0	153		0+	203		0+	253		1	303		2	353		0	403		0	453		0	503
	0	4		0	54		0	104		0	154		0+	204		0+	254		0	304		0	354		0	404		0	454		0	504
	0	5		0	55		0	105		0	155		0+	205		0+	255		0	305		0	355		0	405		0	455		0	505
	0	6		0	56		0	106		1	156		0+	206		0+	256		0	306		2	356		0	406		0	456		0	506
	0	7		0	57		0	107		0	157		0+	207		0+	257		0	307		0	357		0	407		0	457		0	507
	0	8		0	58		0	108		0	158		0+	208		0+	258		1	308		0	358		0	408		1	458		0	508
	0	9		0	59		0	109		0	159		0+	209		0+	259		0	309		0	359		0	409		0	459		0	509
	0	10		0	60		0	110		0	160		1+	210		0+	260		0	310		0	360		0	410		0	460		0	510
	0	11		0	61		0	111		0	161		0+	211		0+	261		0	311		0	361		0	411		0	461		0	511
	0	12		0	62		0	112		0	162		1+	212		0+	262		0	312		0	362		0	412		0	462		0	512
	0	13		0	63		0	113		0	163		0+	213		0+	263		0	313		1	363		0	413		0	463			
	0	14		0	64		0	114		0	164		0+	214		1+	264		0	314		0	364		0	414		2	464			
	0	15		0	65		0	115		0	165		0+	215		0+	265		1	315		0	365		0	415		1	465			
	0	16		0	66		0	116		2	166		0+	216		0+	266		0	316		0	366		0	416		1	466			
	0	17		1	67		0	117		0	167		0+	217		0+	267		1	317		0	367		0	417		0	467			
	0	18		0	68		0	118		0	168		0+	218		0+	268		1	318		0	368		0	418		1	468			
	0	19		0	69		0	119		0	169		0	219		0+	269		1	319		0	369		0	419		1	469			
	0	20		0	70		0	120		0	170		0	220		0	270		2	320		0	370		0	420		0	470			
	1	21		0	71		0	121		0	171		0	221		0	271		2	321		0	371		0	421		0	471			
	1	22		0	72		0	122		0	172		0	222		0	272		1	322		0	372		0	422		0	472			
	0	23		0	73		0	123		1	173		0	223		0	273		2	323		0	373		1	423		2	473			
	0	24		0	74		0	124		0	174		0	224		0	274		8	324		0	374		0	424		0	474			
	0	25		0	75		0	125		0+	175		0	225		0	275		2	325		0	375		0	425		0	475			
	0	26		0	76		0	126		0+	176		0	226		0	276		4	326		0	376		0	426		1	476			
	0	27		0	77		0	127		0+	177		0	227		0	277		4+	327		0	377		0	427		0	477			
	0	28		0	78		0	128		0+	178		0	228		0	278		9+	328		1	378		0	428		0	478			
	0	29		0	79		0	129		0+	179		0	229		0	279		26+	329		0	379		0	429		0	479			
	0	30		0	80		0	130		0+	180		0	230		0	280		34+	330		0	380		0	430		0	480			
	0	31		0	81		0	131		0+	181		0	231		0	281		38+	331		0	381		0	431		0	481			
	0	32		0	82		0	132		0+	182		0	232		0	282		37+	332		0	382		0	432		0	482			
	0	33		0	83		0	133		0+	183		0	233		0	283		33+	333		0	383		0	433		0	483			
	0	34		0	84		0	134		0+	184		0	234		1	284		35+	334		0	384		0	434		0	484			
	0	35		0	85		0	135		0+	185		0	235		0	285		56+	335		0	385		1	435		0	485			
	0	36		0	86		0	136		0+	186		1	236		0	286		67+	336		1	386		0	436		0	486			
	0	37		0	87		0	137		0+	187		0	237		0	287		105+	337		1	387		0	437		0	487			
	0	38		0	88		0	138		0+	188		0	238		0	288		113+	338		4	388		0	438		0	488			
	0	39		0	89		0	139		0+	189		0	239		0	289		76+	339		3	389		0	439		0	489			
	0	40		0	90		0	140		0+	190		0	240		0	290		23+	340		1	390		1	440		0	490			
	0	41		0	91		0	141		0+	191		0	241		0	291		0+	341		0	391		0	441		0	491			
	0	42		0	92		0	142		0	192		0	242		0	292		1+	342		1	392		0	442		0	492			
	0	43		0	93		0	143		0	193		0	243		0	293		1	343		0	393		0	443		0	493			
	0	44		0	94		0	144		0	194		0	244		0	294		1	344		0	394		0	444		0	494			
	0	45		0	95		0	145		0	195		0	245		0	295		0	345		0	395		0	445		0	495			
	0	46		0	96		0	146		0	196		0	246		0	296		0	346		0	396		0	446		0	496			
	0	47		0	97		0	147		0	197		0	247		0	297		2	347		0	397		0	447		0	497			
	0	48		0	98		0	148		0	198		0	248		0	298		0	348		0	398		0	448		0	498			
	0	49		0	99		0	149		0	199		0	249		0	299		1	349		0	399		0	449		0	499			
	0	50		0	100		0	150		0	200		0	250		0	300		0	350		0	400		1	450		0	500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:15:27

```
Configuration     : $DISK1:[ALP3.SAMPLE]H571G1AG_280662254.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:54:49
Sample ID         : H571G1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP3                 Detector geometry:
Elapsed live time: 0 03:20:02.00         Elapsed real time: 0 03:20:14.00   0.1%
Start energy      :  2879.89             End energy       :  6630.06
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5338.28	664	0	36.68	337.14	327	16	5.53E-02	3.9	
2	0	5716.89	11	0	29.35	388.44	385	9	9.17E-04	30.2	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 02:15:29

```
Configuration     : $DISK1:[ALP3.SAMPLE]H571G1AG_280662254.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:54:49
Sample ID         : H571G1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP3                 Detector geometry:
Elapsed live time: 0 03:20:02.00         Elapsed real time: 0 03:20:14.00   0.1%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP3.SAMPLE]H571G1AG_280662254.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5338.27	327	343	664	658	0.23		
5716.88	385	394	11	11	0.00		

End of Report

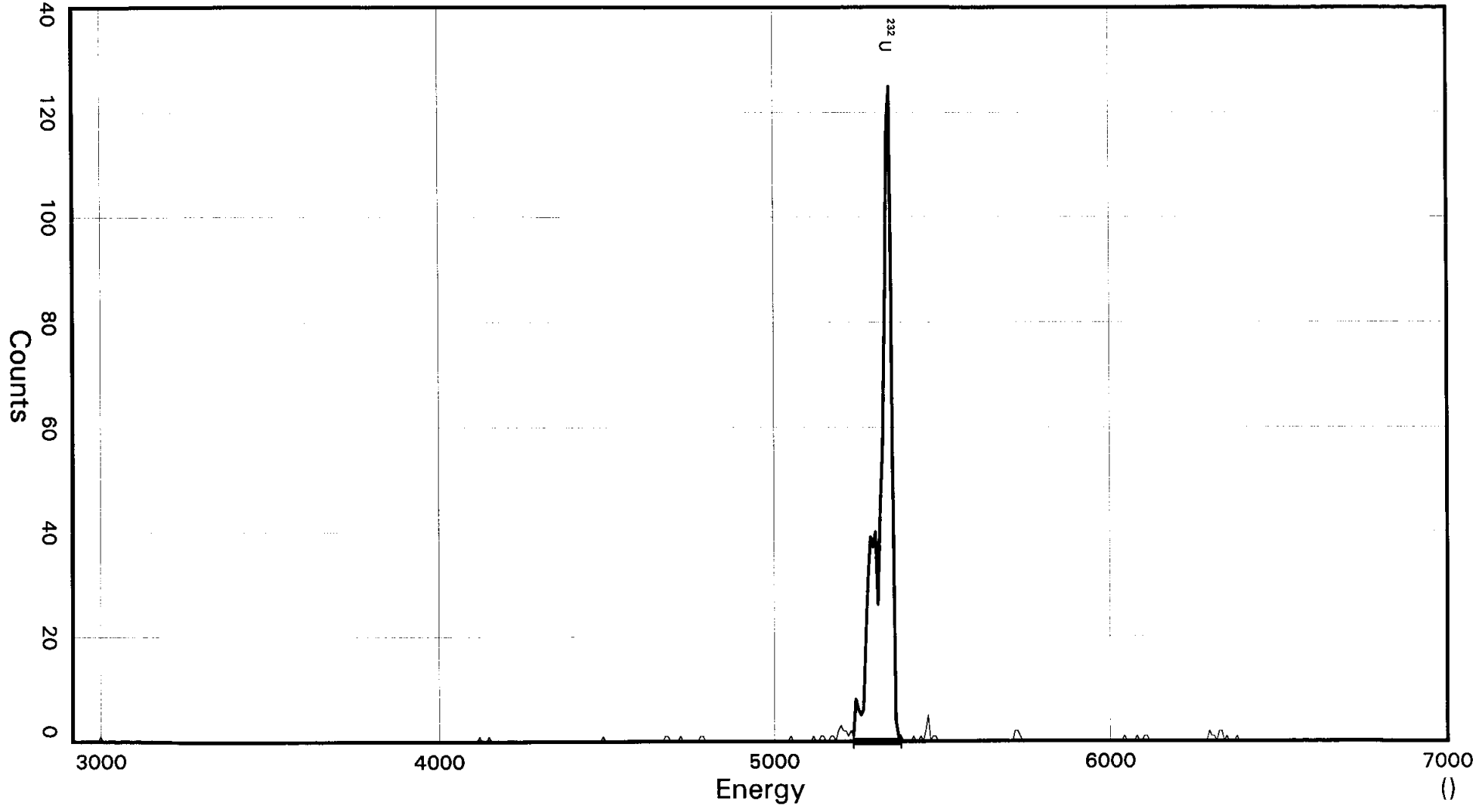
STL Richland WA.

U BRC

Sample ID: H571M1AG

Batch ID: 6146431

Detector ID: ALP4 1



Acquisition Start: 28-JUN-2006 22:55:03.65

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:00.00

Energy Coefficients:

Offset: 2.89454E+03

Slope: 7.47977E+00

Quadrature: -9.32582E-05

SAMPLE IDENTITY: H571M1AG

TITLE : U BRC

DETECTOR : ALP4 1
CONFIGURATION NAME : $DISK1:[ALP4.SAMPLE]H571M1AG_280662255.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:01

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:55:03 CALIB DATE : 01-JUN-2006 23:53:05

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:00

OFFSET : 2894.54 keV CONSTANT FWHM : 7.33333 Channels
SLOPE : 7.47977 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.932582E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571M1AG

Detector: ALP4 1
Report Date: 29-Jun-06 02:15 AM
Acquire Date: 28-JUN-2006 22:55:03.65
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	713	6	0	3.559	5338.0	141.0	314	333	0.00	0.00	P
U-234	3	4	0	0.011	4792.5	141.2	241	260	0.00	0.00	
U-235	0	2	0	-0.002	4415.7	141.4	190	209	0.00	0.00	
U-238	2	5	0	0.005	4215.9	141.5	163	182	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571M1AG
Detector: ALP4 1
Report Date: 29-Jun-06 02:15 AM
Acquire Date: 28-JUN-2006 22:55:03.65

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	1		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	1		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	1	+	253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	1	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	1		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	1		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	2		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	2		308	0		358	0		408	1		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	3		309	0		359	0		409	1		459	0		509
0		10	0		60	0		110	0		160	0		210	0	+	260	2		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	0		261	2		311	0		361	0		411	2		461	0		511
0		12	0		62	0		112	0		162	0		212	0		262	1		312	0		362	0		412	2		462	0		512
0		13	0		63	0		113	0	+	163	0		213	0		263	2		313	0		363	0		413	0		463			
1		14	0		64	0		114	1	+	164	1		214	0		264	1	+	314	0		364	0		414	1		464			
0		15	0		65	0		115	0	+	165	0		215	0		265	8	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0		216	0		266	6	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0		217	0		267	5	+	317	0		367	0		417	0		467			
0		18	0		68	0		118	1	+	168	0		218	0		268	6	+	318	0		368	0		418	1		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	19	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	31	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	39	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	37	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	40	+	323	0		373	1		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	26	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	45	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	56	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	84	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	118	+	328	0		378	1		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	125	+	329	2		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	53	+	330	2		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	4	+	331	1		381	1		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	1	+	332	0		382	1		432	0		482			
0		33	0		83	0		133	0		183	0		233	0		283	1		333	0		383	0		433	0		483			
0		34	0		84	0		134	0		184	0		234	0		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	0		335	0		385	0		435	0		485			
0		36	0		86	0		136	0		186	0		236	0		286	0		336	0		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	0		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	1		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	1		239	1		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	1		240	0		290	0		340	0		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0	+	241	0		291	1		341	0		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0	+	242	0		292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0	+	243	0		293	2		343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0	+	244	0		294	5		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	1	+	245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	1		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	1		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	1		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:15:22

```
Configuration     : $DISK1:[ALP4.SAMPLE]H571M1AG_280662255.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:55:03
Sample ID         : H571M1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP4                 Detector geometry:
Elapsed live time: 0 03:20:00.00         Elapsed real time: 0 03:20:01.00   0.0%
Start energy      :  2916.98             End energy       :  6699.73
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5338.05	713	0	37.40	328.02	314	19	5.94E-02	3.7	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 02:15:24

```
Configuration     : $DISK1:[ALP4.SAMPLE]H571M1AG_280662255.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:55:03
Sample ID         : H571M1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP4                 Detector geometry:
Elapsed live time: 0 03:20:00.00         Elapsed real time: 0 03:20:01.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP4.SAMPLE]H571M1AG_280662255.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5338.04	314	333	713	705	0.30		

End of Report

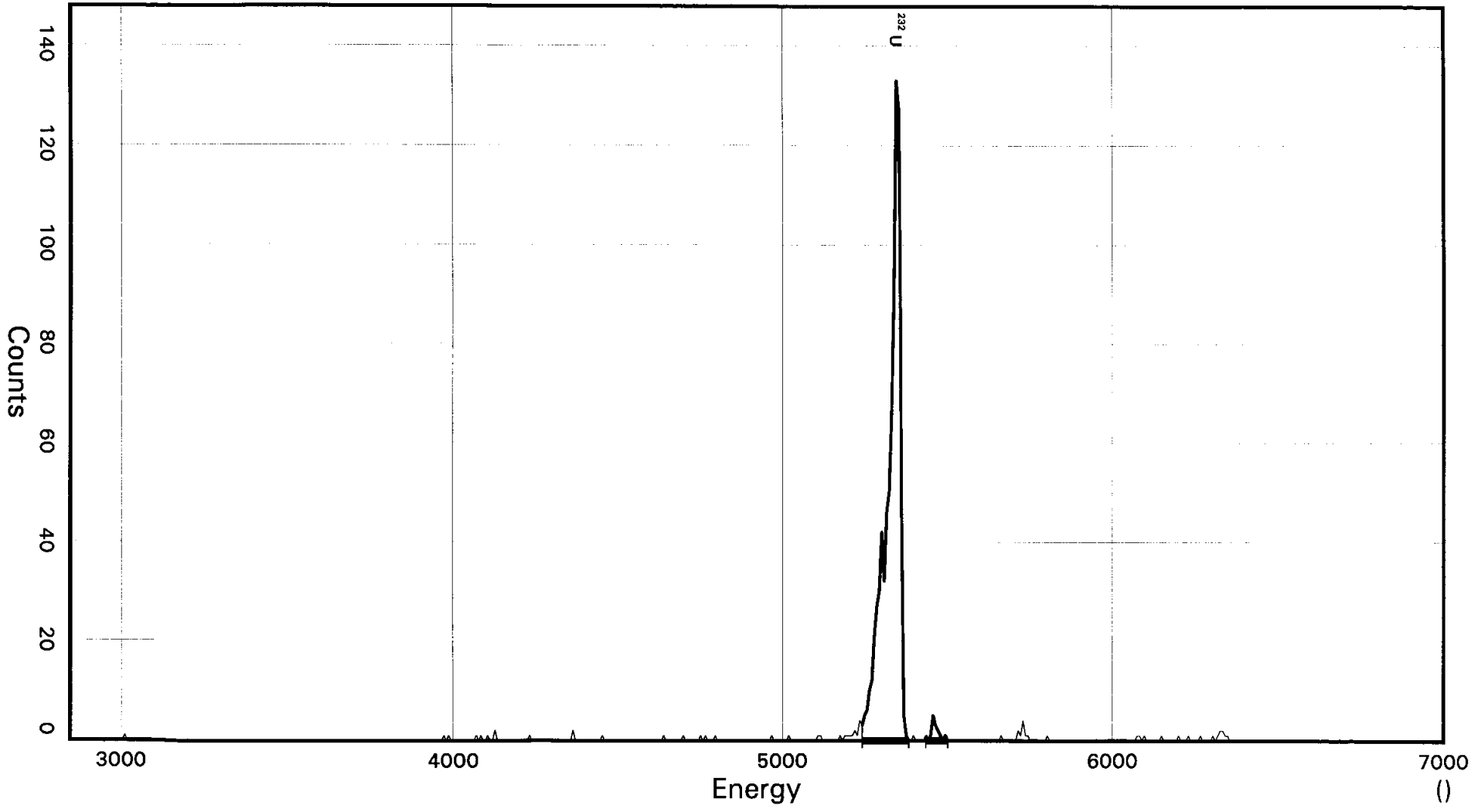
STL Richland WA.

U BRC

Sample ID: H571N1AG

Detector ID: ALP5 1

Batch ID: 6146431



Acquisition Start: 28-JUN-2006 22:55:14.02

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:00.00

Energy Coefficients:

Offset: 2.82331E+03

Slope: 7.48523E+00

Quadrature: -1.38615E-04

SAMPLE IDENTIITY: H571N1AG

TITLE : U BRC

DETECTOR : ALP5 1
CONFIGURATION NAME : $DISK1:[ALP5.SAMPLE]H571N1AG_280662255.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:06

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:55:14 CALIB DATE : 01-JUN-2006 23:52:54

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:00

OFFSET : 2823.31 keV CONSTANT FWHM : 7.16667 Channels
SLOPE : 7.48523 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.138615E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571N1AG

Detector: ALP5 1
Report Date: 29-Jun-06 02:15 AM
Acquire Date: 28-JUN-2006 22:55:14.02
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	765	7	0	3.818	5344.5	140.5	325	344	0.00	0.00	P
U-234	4	10	0	0.010	4798.9	140.8	251	270	0.00	0.00	
U-235	3	1	0	0.014	4422.1	133.7	201	219	0.00	0.00	
U-238	3	4	0	0.011	4222.3	141.3	174	193	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571N1AG
Detector: ALP5 1
Report Date: 29-Jun-06 02:15 AM
Acquire Date: 28-JUN-2006 22:55:14.02

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	1		351	1		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	1	+	252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0		104	1		154	0	+	204	0	+	254	0		304	5		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	3		355	0		405	1		455	0		505
0		6	0		56	0		106	1		156	0	+	206	0	+	256	0		306	2		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	2	+	207	0	+	257	1		307	1		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	1		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	1	+	259	0		309	1		359	0		409	1		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	1	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	0		314	0		364	0		414	1		464			
0		15	0		65	0		115	0		165	0	+	215	1	+	265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0	+	216	0	+	266	1		316	0		366	0		416	0		466			
0		17	0		67	0		117	1		167	0	+	217	0	+	267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0	+	218	0	+	268	1		318	0		368	0		418	0		468			
0		19	0		69	0		119	1		169	1	+	219	0	+	269	1		319	0		369	0		419	1		469			
0		20	0		70	0		120	0		170	0		220	0	+	270	1		320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0		221	0		271	1		321	0		371	0		421	1		471			
0		22	0		72	0		122	1		172	0		222	0		272	2		322	0		372	0		422	2		472			
0		23	0		73	0		123	0		173	0		223	0		273	1		323	0		373	0		423	2		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	4		324	0		374	0		424	1		474			
1		25	0		75	0		125	2	+	175	0		225	0		275	3	+	325	0		375	0		425	1		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	5	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	6	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	10	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	12	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	21	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	27	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	30	+	332	1		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	42	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	32	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	46	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	50	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	66	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	1		288	94	+	338	0		388	1		438	0		488			
0		39	0		89	0		139	1	+	189	0		239	0		289	133	+	339	2		389	1		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	127	+	340	1		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	48	+	341	4		391	1		441	0		491			
0		42	0		92	0		142	0	+	192	0		242	0		292	5	+	342	1		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	1	+	343	1		393	0		443	0		493			
0		44	0		94	0		144	0		194	1		244	0		294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	1		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	0		296	1		346	0		396	0		446	0		496			
0		47	0		97	0		147	0		197	0		247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0		198	0		248	0		298	0		348	0		398	1		448	0		498			
0		49	0		99	0		149	0		199	0		249	0		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:15:34

```
Configuration     : $DISK1:[ALP5.SAMPLE]H571N1AG_280662255.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:55:14
Sample ID         : H571N1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP5                 Detector geometry:
Elapsed live time: 0 03:20:00.00         Elapsed real time: 0 03:20:00.00   0.0%
Start energy      :  2845.76             End energy       :  6619.41
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5344.51	765	0	37.43	338.95	325	19	6.37E-02	3.6	
2	0	5459.40	13	0	29.94	354.50	351	9	1.08E-03	27.7	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 02:15:36

```
Configuration     : $DISK1:[ALP5.SAMPLE]H571N1AG_280662255.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:55:14
Sample ID         : H571N1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP5                 Detector geometry:
Elapsed live time: 0 03:20:00.00         Elapsed real time: 0 03:20:00.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP5.SAMPLE]H571N1AG_280662255.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5344.50	325	344	765	758	0.25		
5459.40	351	360	13	14	-0.28		

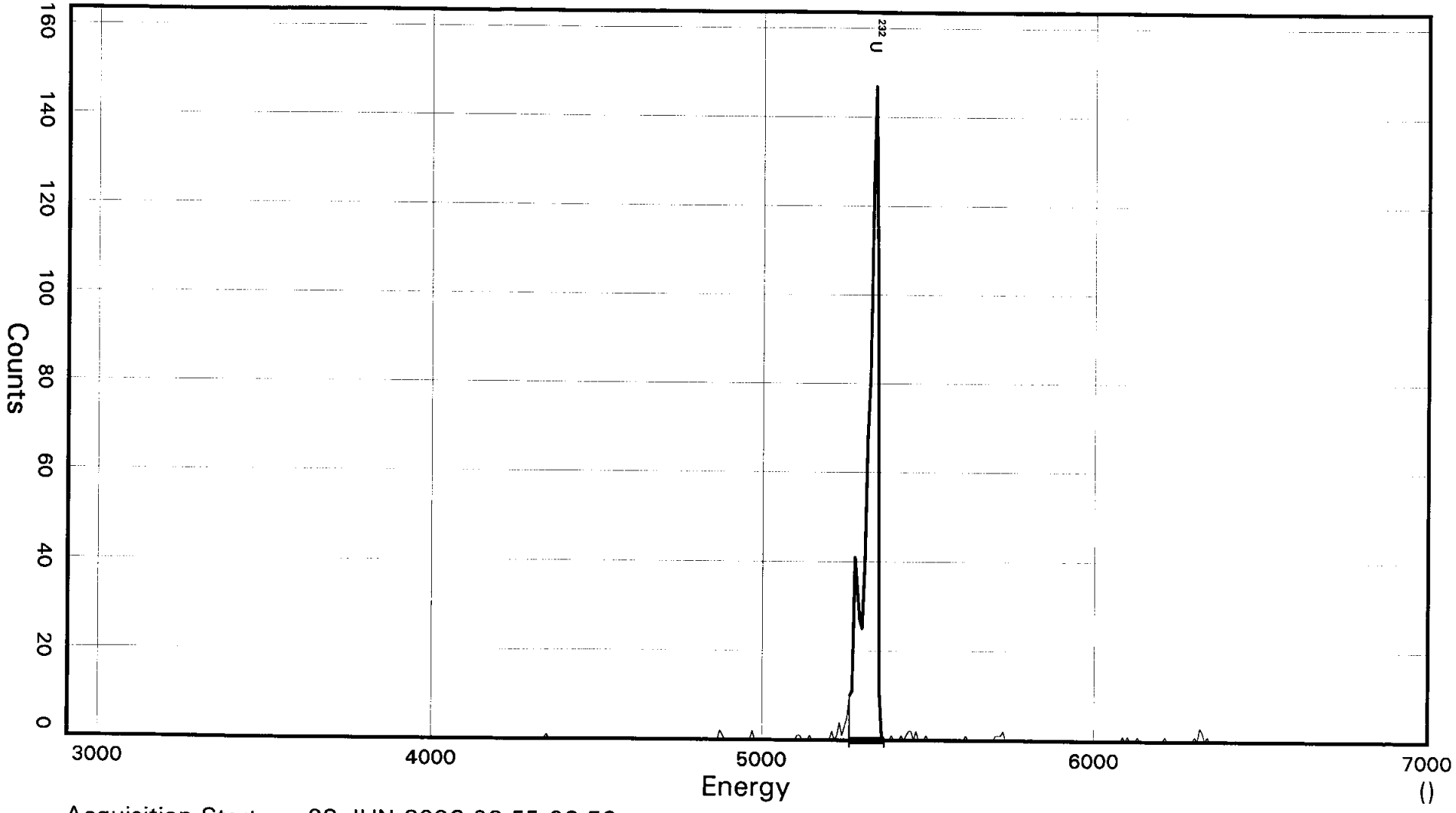
End of Report

STL Richland WA.

U BRC

Sample ID: H571Q1AG
Detector ID: ALP6 1

Batch ID: 6146431



Acquisition Start: 28-JUN-2006 22:55:26.59
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:09.00

Energy Coefficients:
Offset: 2.88682E+03
Slope: 7.41670E+00
Quadrature: 9.64089E-05

SAMPLE IDENTIITY: H571Q1AG

TITLE : U BRC

DETECTOR : ALP6 1
CONFIGURATION NAME : $DISK1:[ALP6.SAMPLE]H571Q1AG_280662255.CNF;1

ACQUIRE DATE of BACKGROUND: 03-JUN-2006 09:55:25

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:55:26 CALIB DATE : 01-JUN-2006 23:53:37

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:09

OFFSET : 2886.82 keV CONSTANT FWHM : 7.00000 Channels
SLOPE : 7.41670 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : 9.640890E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571Q1AG

Detector: ALP6 1
Report Date: 29-Jun-06 02:16 AM
Acquire Date: 28-JUN-2006 22:55:26.59
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	725	4	0	3.618	5333.3	104.7	319	333	0.00	0.00	P
U-234	0	0	0	0.000	4787.7	104.5	246	260	0.00	0.00	
U-235	1	2	0	0.003	4410.9	111.8	195	210	0.00	0.00	
U-238	0	1	0	-0.001	4211.1	104.3	169	183	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571Q1AG
Detector: ALP6 1
Report Date: 29-Jun-06 02:16 AM
Acquire Date: 28-JUN-2006 22:55:26.59

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	1		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	0		358	0		408	1		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	3		460	0		510
0		11	0		61	0		111	0		161	0		211	0		261	0		311	0		361	0		411	2		461	0		511
0		12	0		62	0		112	0		162	0		212	0		262	2		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	0		313	0		363	0		413	1		463			
0		14	0		64	0		114	0		164	0		214	0		264	1		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0		265	4		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	0		266	1		316	1		366	0		416	0		466			
0		17	0		67	0		117	0		167	0		217	2		267	3		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	1		268	5		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	10	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	11	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	41	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	34	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	27	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	25	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	40	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	68	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	81	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	123	+	328	1		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	147	+	329	1		379	1		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	2		280	96	+	330	1		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	11	+	331	2		381	1		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	1	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	0		333	0		383	0		433	0		483			
0		34	0		84	0		134	0		184	0		234	0		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	0		335	0		385	1		435	0		485			
0		36	0		86	0		136	0		186	0		236	0		286	1		336	0		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	0		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	1		340	0		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	1		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	2		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	0		294	2		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	2		346	0		396	1		446	0		496			
0		47	0		97	0		147	1	+	197	0	+	247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	1		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	1		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	1		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:15:56

```
Configuration     : $DISK1:[ALP6.SAMPLE]H571Q1AG_280662255.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:55:26
Sample ID         : H571Q1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP6                 Detector geometry:
Elapsed live time: 0 03:20:09.00         Elapsed real time: 0 03:20:09.00   0.0%
Start energy      :  2909.07             End energy       :  6709.44
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5333.29	725	0	29.67	328.46	319	14	6.04E-02	3.7	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 02:16:01

```
Configuration     : $DISK1:[ALP6.SAMPLE]H571Q1AG_280662255.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:55:26
Sample ID         : H571Q1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP6                 Detector geometry:
Elapsed live time: 0 03:20:09.00         Elapsed real time: 0 03:20:09.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

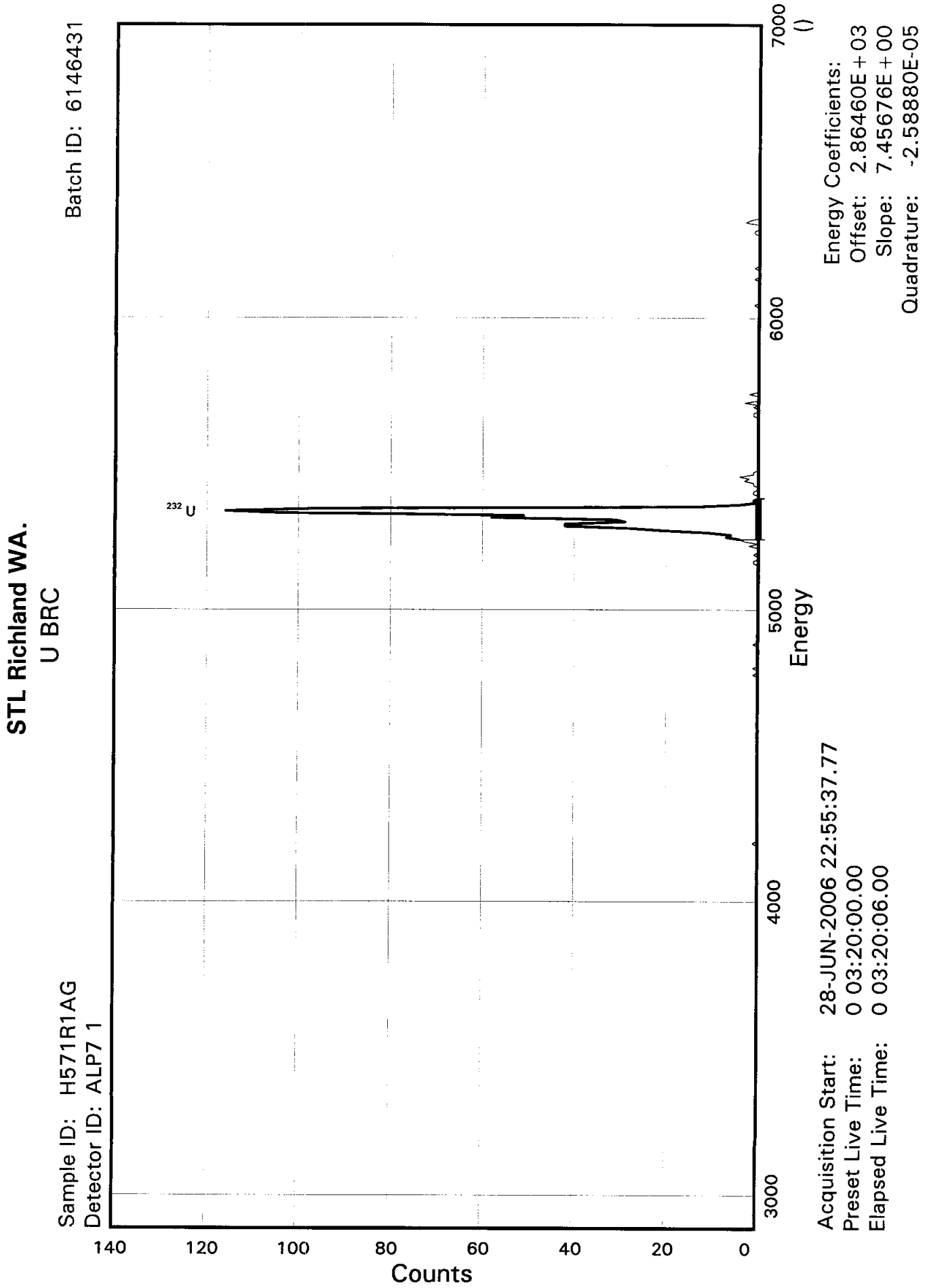
Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP6.SAMPLE]H571Q1AG_280662255.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.28	319	333	725	715	0.37		

End of Report


STL Richland WA.
U BRC
Batch ID: 6146431
Sample ID: H571R1AG
Detector ID: ALP7 1
232 U
Counts
Energy
140
120
100
80
60
40
20
0
3000
4000
5000
6000
7000
()
Acquisition Start: 28-JUN-2006 22:55:37.77
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:06.00
Energy Coefficients:
Offset: 2.86460E+03
Slope: 7.45676E+00
Quadrature: -2.58880E-05

SAMPLE IDENTIITY: H571R1AG

TITLE : U BRC

DETECTOR : ALP7 1
CONFIGURATION NAME : $DISK1:[ALP7.SAMPLE]H571R1AG_280662255.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:16

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:55:37 CALIB DATE : 01-JUN-2006 23:54:09

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:06

OFFSET : 2864.60 keV CONSTANT FWHM : 6.16667 Channels
SLOPE : 7.45676 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.258880E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571R1AG

Detector: ALP7 1
Report Date: 29-Jun-06 02:16 AM
Acquire Date: 28-JUN-2006 22:55:37.77
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	668	4	0	3.334	5334.3	141.4	319	338	0.00	0.00	P
U-234	2	0	0	0.010	4788.7	141.4	246	265	0.00	0.00	
U-235	0	0	0	0.000	4411.9	141.5	195	214	0.00	0.00	
U-238	1	1	0	0.004	4212.1	141.5	168	187	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571R1AG
Detector: ALP7 1
Report Date: 29-Jun-06 02:16 AM
Acquire Date: 28-JUN-2006 22:55:37.77

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	1	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	1		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	1		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	1	+	260	0		310	0		360	0		410	1		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	1		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	1		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0	+	265	0		315	0		365	0		415	3		465			
0		16	0		66	0		116	0		166	0		216	0		266	2		316	0		366	0		416	2		466			
0		17	0		67	0		117	0		167	0		217	0		267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	3		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	4	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	7	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	1		271	6	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	11	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	21	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	28	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	42	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	42	+	326	1		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	29	+	327	1		377	1		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	31	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	1	+	179	0		229	0		279	58	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	51	+	330	1		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	104	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	116	+	332	3		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	95	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	14	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	4	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	0	+	336	2		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	1	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	0		339	0		389	1		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	1		340	0		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	1		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	0		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	0		294	1		344	0		394	1		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	1		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	3		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	2		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	4		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	1		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	1		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:16:07

```
Configuration     : $DISK1:[ALP7.SAMPLE]H571R1AG_280662255.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:55:37
Sample ID         : H571R1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP7                 Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:06.00   0.0%
Start energy      :  2886.97             End energy       :  6675.68
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5334.32	668	0	29.83	331.59	319	19	5.56E-02	3.9	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 02:16:09

```
Configuration     : $DISK1:[ALP7.SAMPLE]H571R1AG_280662255.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:55:37
Sample ID         : H571R1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP7                 Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:06.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

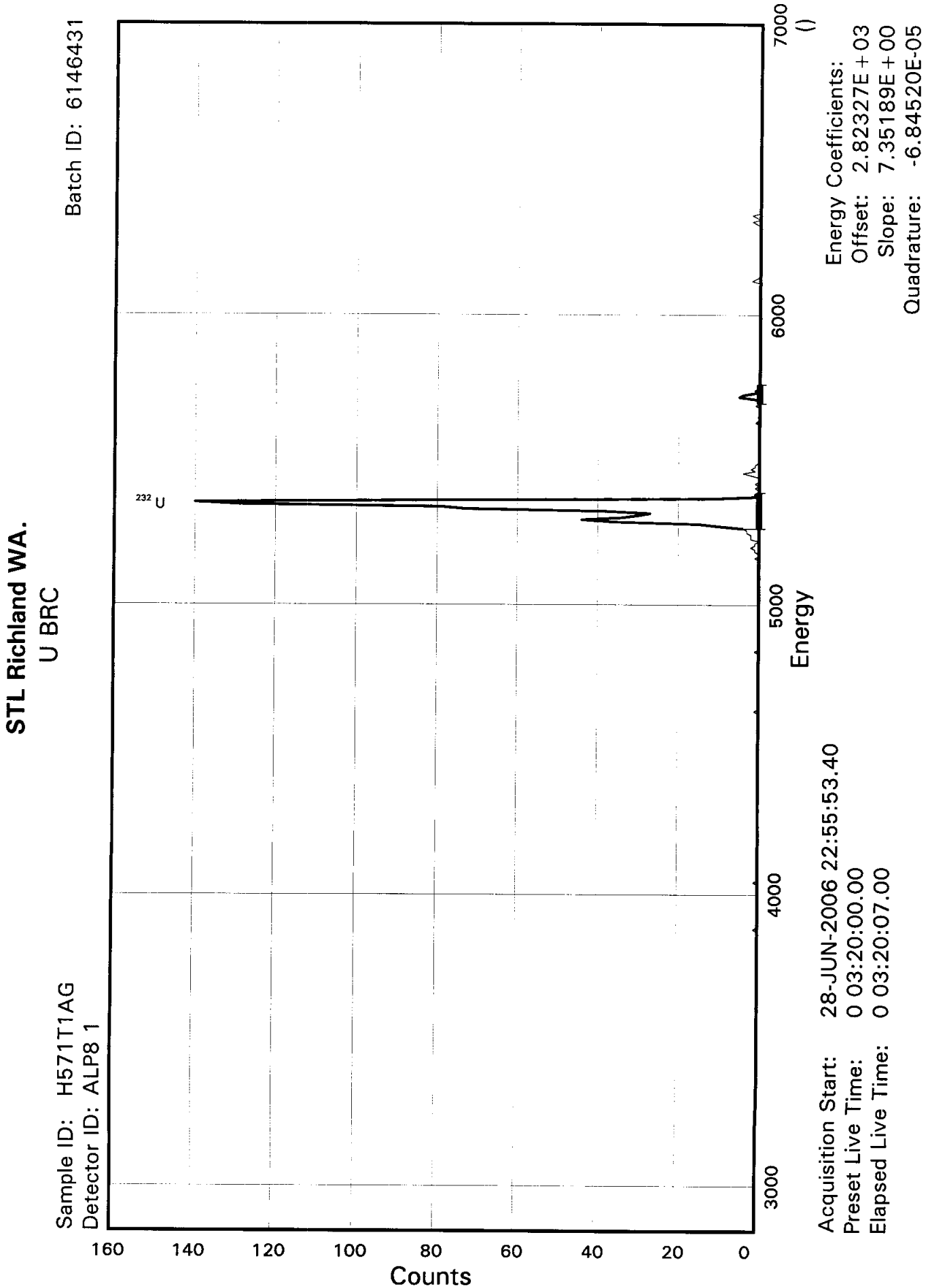
Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP7.SAMPLE]H571R1AG_280662255.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5334.31	319	338	668	664	0.15		

End of Report


STL Richland WA.
U BRC
Batch ID: 6146431
Sample ID: H571T1AG
Detector ID: ALP8 1
232 U
Counts
Energy
160
140
120
100
80
60
40
20
0
3000
4000
5000
6000
7000
()
Acquisition Start: 28-JUN-2006 22:55:53.40
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:07.00
Energy Coefficients:
Offset: 2.82327E+03
Slope: 7.35189E+00
Quadrature: -6.84520E-05

SAMPLE IDENTIITY: H571T1AG

TITLE : U BRC

DETECTOR : ALP8 1
CONFIGURATION NAME : $DISK1:[ALP8.SAMPLE]H571T1AG_280662255.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:19

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:55:53 CALIB DATE : 01-JUN-2006 23:53:23

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:07

OFFSET : 2823.27 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 7.35189 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.684520E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571T1AG

Detector: ALP8 1
Report Date: 29-Jun-06 02:16 AM
Acquire Date: 28-JUN-2006 22:55:53.40
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	769	9	0	3.834	5344.4	124.2	333	350	0.00	0.00	P
U-234	1	3	0	0.002	4798.8	124.4	258	275	0.00	0.00	
U-235	0	1	0	-0.001	4422.0	124.5	207	224	0.00	0.00	
U-238	0	0	0	0.000	4222.2	124.5	180	197	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571T1AG
Detector: ALP8 1
Report Date: 29-Jun-06 02:16 AM
Acquire Date: 28-JUN-2006 22:55:53.40

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1		0	51		0	101		0	151		0	201		0	251		0	301		0	351		0	401		1	451		0	501
		2		0	52		0	102		0	152		0	202		0	252		0	302		1	352		0	402		0	452		0	502
	0	3		0	53		0	103		0	153		0	203		0	253		0	303		0	353		0	403		0	453		0	503
	0	4		0	54		0	104		0	154		0	204		0	254		0	304		1	354		0	404		0	454		0	504
	0	5		0	55		0	105		0	155		0	205		0	255		0	305		0	355		0	405		0	455		0	505
	0	6		0	56		0	106		0	156		0	206		0	256		0	306		0	356		0	406		0	456		0	506
	0	7		0	57		0	107		0	157		0+	207		0	257		0	307		0	357		0	407		0	457		0	507
	0	8		0	58		0	108		0	158		0+	208		0+	258		0	308		2	358		0	408		0	458		0	508
	0	9		0	59		0	109		0	159		0+	209		0+	259		0	309		4	359		0	409		0	459		0	509
	0	10		0	60		0	110		0	160		0+	210		0+	260		0	310		1	360		0	410		0	460		0	510
	0	11		0	61		0	111		0	161		0+	211		0+	261		0	311		2	361		0	411		0	461		0	511
	0	12		0	62		0	112		0	162		0+	212		0+	262		0	312		1	362		0	412		0	462		0	512
	0	13		0	63		0	113		0	163		0+	213		0+	263		0	313		1	363		0	413		0	463			
	0	14		0	64		0	114		0	164		0+	214		0+	264		0	314		0	364		0	414		0	464			
	0	15		0	65		0	115		0	165		0+	215		0+	265		0	315		0	365		0	415		0	465			
	0	16		0	66		0	116		1	166		0+	216		0+	266		0	316		0	366		0	416		0	466			
	0	17		0	67		0	117		0	167		0+	217		0+	267		0	317		0	367		0	417		0	467			
	0	18		0	68		0	118		0	168		0+	218		0+	268		0	318		0	368		0	418		0	468			
	0	19		0	69		0	119		0	169		0+	219		0+	269		1	319		0	369		0	419		0	469			
	0	20		0	70		0	120		0	170		0+	220		0+	270		0	320		0	370		0	420		0	470			
	0	21		0	71		0	121		0	171		0+	221		0+	271		0	321		0	371		0	421		0	471			
	0	22		0	72		0	122		0	172		0+	222		0+	272		1	322		0	372		0	422		0	472			
	0	23		0	73		0	123		0	173		0+	223		0+	273		1	323		0	373		0	423		0	473			
	0	24		0	74		0	124		0	174		0+	224		0+	274		2	324		0	374		0	424		0	474			
	0	25		0	75		0	125		0	175		0	225		1+	275		1	325		0	375		0	425		0	475			
	0	26		0	76		0	126		0	176		0	226		0	276		1	326		0	376		0	426		0	476			
	0	27		0	77		0	127		0	177		0	227		0	277		0	327		0	377		0	427		1	477			
	0	28		0	78		0	128		0	178		0	228		0	278		2	328		0	378		0	428		2	478			
	0	29		0	79		0	129		0	179		0	229		0	279		2	329		0	379		0	429		0	479			
	0	30		0	80		0	130		0+	180		0	230		0	280		2	330		0	380		0	430		1	480			
	0	31		0	81		0	131		0+	181		0	231		0	281		3	331		0	381		0	431		2	481			
	0	32		0	82		0	132		0+	182		0	232		0	282		3	332		0	382		0	432		0	482			
	0	33		0	83		0	133		0+	183		0	233		0	283		4+	333		1	383		0	433		0	483			
	0	34		0	84		0	134		0+	184		0	234		0	284		10+	334		0	384		0	434		0	484			
	0	35		0	85		0	135		0+	185		0	235		0	285		15+	335		0	385		0	435		0	485			
	0	36		0	86		0	136		0+	186		0	236		0	286		36+	336		0	386		0	436		0	486			
	0	37		0	87		0	137		0+	187		0	237		0	287		44+	337		0	387		0	437		0	487			
	0	38		0	88		0	138		0+	188		0	238		0	288		34+	338		0	388		0	438		0	488			
	0	39		0	89		0	139		0+	189		0	239		0	289		30+	339		0	389		0	439		0	489			
	0	40		0	90		0	140		0+	190		0	240		0	290		27+	340		0	390		0	440		0	490			
	0	41		0	91		0	141		0+	191		0	241		0	291		38+	341		1	391		0	441		0	491			
	0	42		0	92		0	142		0+	192		0	242		0	292		73+	342		0	392		0	442		0	492			
	0	43		0	93		0	143		0+	193		0	243		0	293		79+	343		0	393		0	443		0	493			
	0	44		0	94		1	144		0+	194		0	244		0	294		129+	344		1	394		0	444		0	494			
	0	45		0	95		0	145		0+	195		0	245		0	295		140+	345		5	395		0	445		0	495			
	0	46		0	96		0	146		0+	196		0	246		0	296		82+	346		4	396		0	446		0	496			
	0	47		0	97		0	147		0+	197		1	247		0	297		12+	347		1	397		0	447		0	497			
	0	48		0	98		0	148		0	198		0	248		0	298		0+	348		1	398		0	448		0	498			
	0	49		0	99		0	149		0	199		0	249		0	299		1+	349		0	399		0	449		0	499			
	0	50		0	100		0	150		0	200		0	250		0	300		0	350		0	400		2	450		0	500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:16:17

```
Configuration     : $DISK1:[ALP8.SAMPLE]H571T1AG_280662255.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:55:53
Sample ID         : H571T1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP8                 Detector geometry:
Elapsed live time: 0 03:20:07.00         Elapsed real time: 0 03:20:07.00   0.0%
Start energy      :  2845.33             End energy       :  6569.50
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5344.37	769	0	36.76	344.02	333	17	6.40E-02	3.6	
2	0	5720.24	12	0	29.41	395.50	392	9	9.99E-04	28.9	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 02:16:21

```
Configuration     : $DISK1:[ALP8.SAMPLE]H571T1AG_280662255.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:55:53
Sample ID         : H571T1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP8                 Detector geometry:
Elapsed live time: 0 03:20:07.00         Elapsed real time: 0 03:20:07.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP8.SAMPLE]H571T1AG_280662255.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5344.36	333	350	769	754	0.54		
5720.23	392	401	12	12	0.00		

End of Report

STL RICHLAND

SEVERN TRENT **STL**

URANIUM ISOTOPIC COUNTING REQUEST

6/29
02 17

C.R. Technician: DD

Date Counted: 6/28/06

Counting Time
Sample: 200 Minutes
Background: See Alpha Regions Report
BRC 5/10/06

SOP's
Operating: RICHRD008
Review: RICHRD0016

6146431

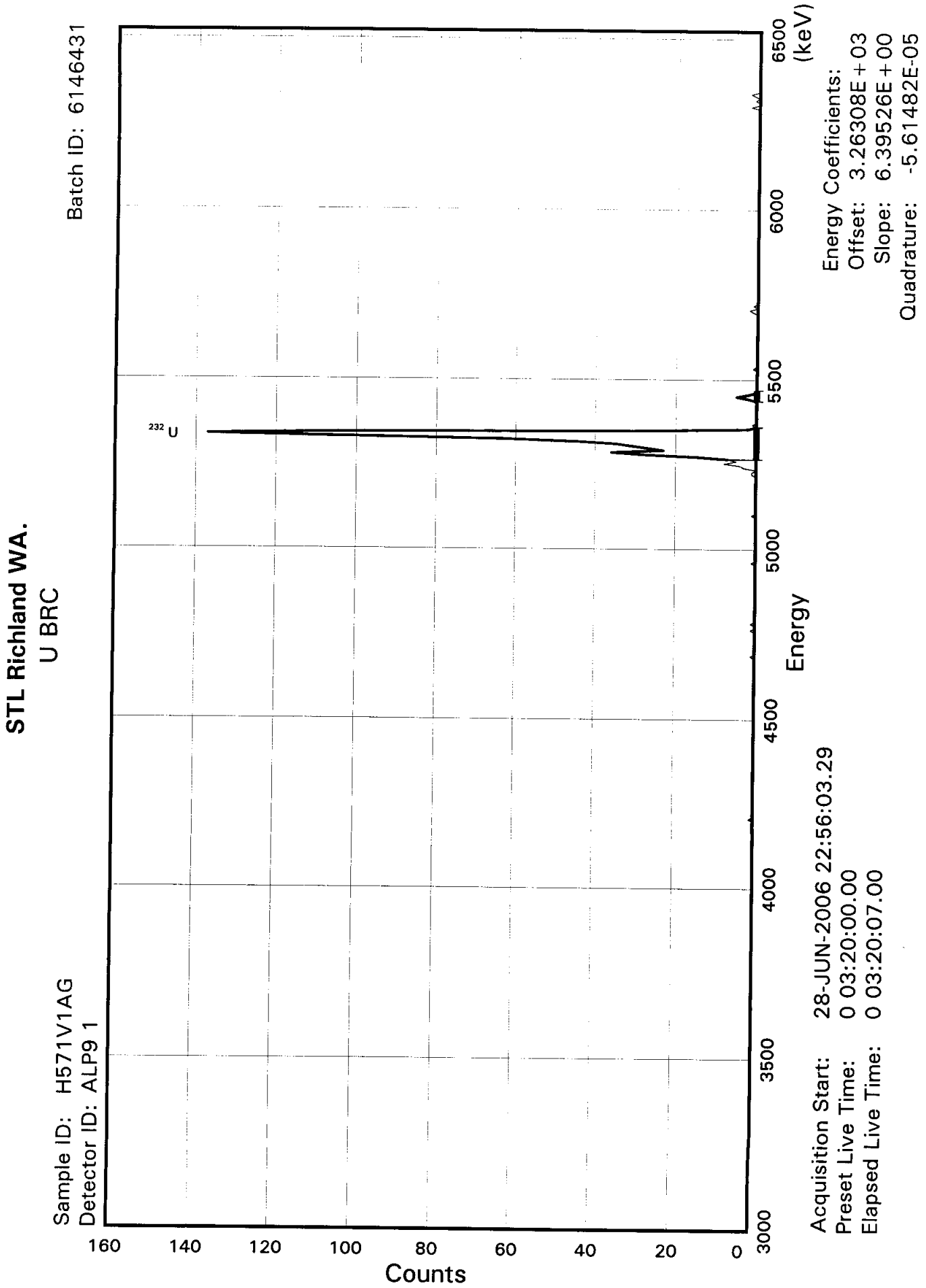
WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H571V1AG	See Counting Room Printout for ROI information				9	
H571X1AG	See Counting Room Printout for ROI information				10	
H5710 1AG	See Counting Room Printout for ROI information				11	
H5711 1AG	See Counting Room Printout for ROI information				12	
H5712 1AG	See Counting Room Printout for ROI information				64	
H5713 1AG	See Counting Room Printout for ROI information				83	
H5714 1AG	See Counting Room Printout for ROI information				84	
H6AT0 1AA	See Counting Room Printout for ROI information				85	
H6AT0 1AC	See Counting Room Printout for ROI information				87	

Comments:

Form No: RC-011, 7/02, Rev 8

Approved by: S

Date: 6/29/06


STL Richland WA.
U BRC
Batch ID: 6146431
Sample ID: H571V1AG
Detector ID: ALP9 1
232 U
Counts
160
140
120
100
80
60
40
20
0
Energy
3000
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 28-JUN-2006 22:56:03.29
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:07.00
Energy Coefficients:
Offset: 3.26308E+03
Slope: 6.39526E+00
Quadrature: -5.61482E-05

SAMPLE IDENTIITY: H571V1AG

TITLE : U BRC

DETECTOR : ALP9 1
CONFIGURATION NAME : $DISK1:[ALP9.SAMPLE]H571V1AG_280662256.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:21

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:56:03 CALIB DATE : 01-JUN-2006 23:54:19

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:07

OFFSET : 3263.08 keV CONSTANT FWHM : 5.83333 Channels
SLOPE : 6.39526 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.561482E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571V1AG

Detector: ALP9 1
Report Date: 29-Jun-06 02:16 AM
Acquire Date: 28-JUN-2006 22:56:03.29
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	692	2	0	3.456	5333.3	95.4	314	329	0.00	0.00	P
U-234	2	1	0	0.009	4787.8	95.5	228	243	0.00	0.00	
U-235	0	0	0	0.000	4411.0	95.6	169	184	0.00	0.00	
U-238	1	0	0	0.005	4211.2	95.7	138	153	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571V1AG
Detector: ALP9 1
Report Date: 29-Jun-06 02:16 AM
Acquire Date: 28-JUN-2006 22:56:03.29

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0		201	0		251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0	+	152	0		202	0		252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0	+	153	0		203	0		253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0		254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	0		255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	0		256	0		306	1		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	0		257	1		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0		208	0		258	1		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0		209	0		259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0		210	0		260	3		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	0		261	4		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	0		262	8		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	5		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0		264	7	+	314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0		265	15	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	1		266	28	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0		217	0		267	36	+	317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	0		268	23	+	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	27	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	31	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	35	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	45	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	1		223	0		273	63	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	106	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	137	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	105	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	29	+	327	0		377	0		427	2		477			
0		28	0		78	0		128	0	+	178	0	+	228	0		278	2	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0	+	229	0		279	0		329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0	+	230	0		280	1		330	0		380	0		430	1		480			
0		31	0		81	0		131	0	+	181	0	+	231	0		281	0		331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0	+	232	0		282	0		332	1		382	0		432	1		482			
0		33	0		83	0		133	0	+	183	0	+	233	0		283	0		333	2		383	0		433	2		483			
0		34	0		84	0		134	0	+	184	0	+	234	0		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	1	+	235	0		285	0		335	1		385	0		435	0		485			
0		36	0		86	0		136	0		186	0	+	236	0		286	0		336	0		386	0		436	0		486			
0		37	0		87	0		137	0		187	0	+	237	0		287	0		337	0		387	0		437	0		487			
0		38	0		88	0	+	138	0		188	1	+	238	1		288	0		338	0		388	0		438	0		488			
0		39	0		89	0	+	139	0		189	0	+	239	0		289	0		339	0		389	0		439	0		489			
0		40	0		90	0	+	140	0		190	0	+	240	0		290	0		340	0		390	0		440	0		490			
0		41	0		91	0	+	141	0		191	0	+	241	0		291	0		341	0		391	0		441	0		491			
0		42	0		92	0	+	142	0		192	0	+	242	0		292	2		342	0		392	0		442	0		492			
0		43	0		93	0	+	143	0		193	0	+	243	0		293	5		343	0		393	0		443	0		493			
0		44	0		94	0	+	144	0		194	0		244	0		294	2		344	0		394	0		444	0		494			
0		45	0		95	0	+	145	0		195	0		245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0	+	146	0		196	0		246	0		296	0		346	0		396	0		446	0		496			
0		47	0		97	0	+	147	0		197	0		247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	1	+	148	0		198	0		248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0	+	149	0		199	0		249	0		299	0		349	0		399	0		449	0		499			
0		50	0		100	0	+	150	0		200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:16:28

```
Configuration     : $DISK1:[ALP9.SAMPLE]H571V1AG_280662256.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:56:03
Sample ID         : H571V1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP9                 Detector geometry:
Elapsed live time: 0 03:20:07.00         Elapsed real time: 0 03:20:07.00   0.0%
Start energy      :  3282.26 keV         End energy       :  6522.74 keV
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5333.35	692	0	25.58	324.64	314	15	5.76E-02	3.8	
2	0	5450.05	10	0	19.19	343.00	341	5	8.33E-04	31.6	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 02:16:32

```
Configuration     : $DISK1:[ALP9.SAMPLE]H571V1AG_280662256.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:56:03
Sample ID         : H571V1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP9                 Detector geometry:
Elapsed live time: 0 03:20:07.00         Elapsed real time: 0 03:20:07.00   0.0%
Energy tolerance :    40.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			
Grand Total Activity :			0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP9.SAMPLE]H571V1AG_280662256.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.34	314	329	692	689	0.11		
5450.04	341	346	10	9	0.32		

End of Report

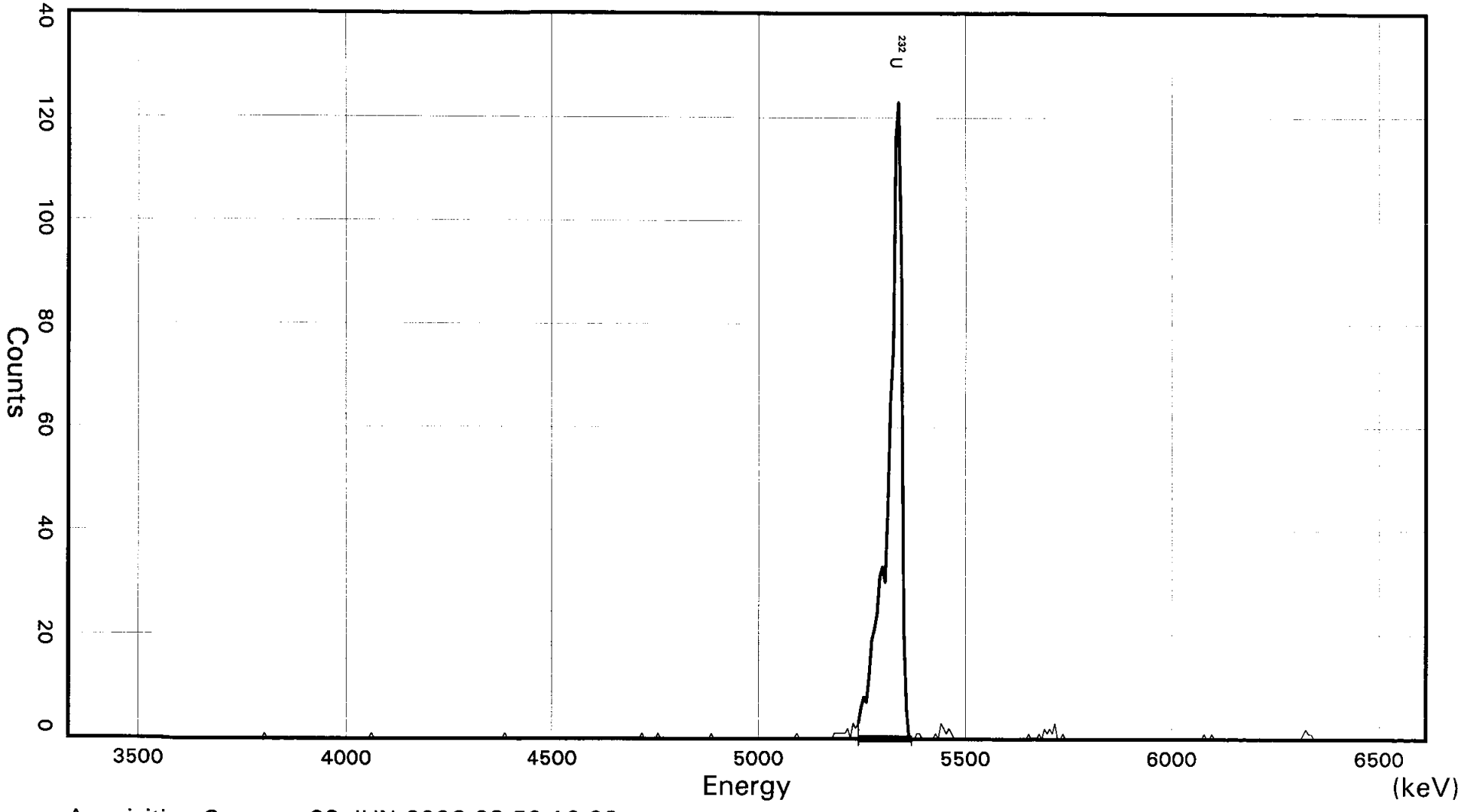
STL Richland WA.

U BRC

Sample ID: H571X1AG

Detector ID: ALP10 1

Batch ID: 6146431



Acquisition Start: 28-JUN-2006 22:56:16.03

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:

Offset: 3.31262E+03

Slope: 6.45058E+00

Quadrature: -8.95822E-06

SAMPLE IDENTIITY: H571X1AG

TITLE : U BRC

DETECTOR : ALP10 1
CONFIGURATION NAME : $DISK1:[ALP10.SAMPLE]H571X1AG_280662256.CNF;
1
ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:26

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:56:16 CALIB DATE : 01-JUN-2006 23:53:52

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:03

OFFSET : 3312.62 keV CONSTANT FWHM : 6.83333 Channels
SLOPE : 6.45058 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.895822E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571X1AG

Detector: ALP10 1
Report Date: 29-Jun-06 02:16 AM
Acquire Date: 28-JUN-2006 22:56:16.03
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	745	7	0	3.717	5331.6	128.9	299	319	0.00	0.00	P
U-234	2	2	0	0.008	4786.1	128.9	214	234	0.00	0.00	
U-235	1	1	0	0.004	4409.3	129.0	156	176	0.00	0.00	
U-238	0	2	0	-0.002	4209.5	129.0	125	145	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571X1AG
Detector: ALP10 1
Report Date: 29-Jun-06 02:16 AM
Acquire Date: 28-JUN-2006 22:56:16.03

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0		251	8	+	301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	0		252	7	+	302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	12	+	303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0		254	19	+	304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	0		255	21	+	305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0	+	156	0		206	0		256	24	+	306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0	+	157	0		207	0		257	31	+	307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0	+	158	0		208	0		258	33	+	308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0	+	159	0		209	0		259	30	+	309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0	+	160	0		210	0		260	44	+	310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0	+	161	0		211	0		261	65	+	311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0	+	162	0		212	0		262	75	+	312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0	+	163	0		213	0		263	116	+	313	1		363	0		413	0		463			
0		14	0		64	0		114	0	+	164	0	+	214	0		264	123	+	314	0		364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0	+	215	0		265	94	+	315	0		365	0		415	0		465			
0		16	0		66	1		116	1	+	166	0	+	216	0		266	21	+	316	0		366	0		416	1		466			
0		17	0		67	0		117	0	+	167	0	+	217	0		267	6	+	317	1		367	0		417	2		467			
0		18	0		68	0		118	0	+	168	1	+	218	0		268	0	+	318	0		368	0		418	1		468			
0		19	0		69	0		119	0	+	169	0	+	219	0		269	0		319	2		369	0		419	1		469			
0		20	0		70	0		120	0	+	170	0	+	220	0		270	0		320	1		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0	+	221	0		271	1		321	2		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0	+	222	0		272	1		322	1		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0	+	223	0		273	0		323	3		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	1	+	224	0		274	0		324	0		374	0		424	0		474			
0		25	0		75	0	+	125	0	+	175	0	+	225	0		275	0		325	0		375	0		425	0		475			
0		26	1		76	0	+	126	0	+	176	0	+	226	1		276	0		326	1		376	0		426	0		476			
0		27	0		77	0	+	127	0		177	0	+	227	0		277	0		327	0		377	0		427	0		477			
0		28	0		78	0	+	128	0		178	0	+	228	0		278	1		328	0		378	0		428	0		478			
0		29	0		79	0	+	129	0		179	0	+	229	0		279	0		329	0		379	1		429	0		479			
0		30	0		80	0	+	130	0		180	0	+	230	0		280	3		330	0		380	0		430	0		480			
0		31	0		81	0	+	131	0		181	0	+	231	0		281	2		331	0		381	0		431	0		481			
0		32	0		82	0	+	132	0		182	0	+	232	0		282	1		332	0		382	1		432	0		482			
0		33	0		83	0	+	133	0		183	0	+	233	0		283	2		333	0		383	0		433	0		483			
0		34	0		84	0	+	134	0		184	0	+	234	0		284	1		334	0		384	0		434	0		484			
0		35	0		85	0	+	135	0		185	0		235	0		285	0		335	0		385	0		435	0		485			
0		36	0		86	0	+	136	0		186	0		236	0		286	0		336	0		386	0		436	0		486			
0		37	0		87	0	+	137	0		187	0		237	0		287	0		337	0		387	0		437	0		487			
0		38	0		88	0	+	138	0		188	0		238	0		288	0		338	0		388	0		438	0		488			
0		39	0		89	0	+	139	0		189	0		239	0		289	0		339	0		389	0		439	0		489			
0		40	0		90	0	+	140	0		190	0		240	1		290	0		340	0		390	0		440	0		490			
0		41	0		91	0	+	141	0		191	0		241	1		291	0		341	0		391	0		441	0		491			
0		42	0		92	0	+	142	0		192	0		242	1		292	0		342	0		392	0		442	0		492			
0		43	0		93	0	+	143	0		193	0		243	1		293	0		343	0		393	0		443	0		493			
0		44	0		94	0	+	144	0		194	1		244	1		294	0		344	0		394	0		444	0		494			
0		45	0		95	0	+	145	0		195	0		245	2		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	0		296	0		346	0		396	0		446	0		496			
0		47	0		97	0		147	0		197	0		247	3		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0		198	0		248	2		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	3	+	299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	6	+	300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:16:38

```
Configuration     : $DISK1:[ALP10.SAMPLE]H571X1AG_280662256.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:56:16
Sample ID         : H571X1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP10                Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   0.0%
Start energy      :  3331.97 keV         End energy       :  6612.96 keV
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5331.63	745	0	32.25	313.13	299	20	6.21E-02	3.7	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 02:16:39

```
Configuration     : $DISK1:[ALP10.SAMPLE]H571X1AG_280662256.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:56:16
Sample ID         : H571X1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP10                Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   0.0%
Energy tolerance :    40.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP10.SAMPLE]H571X1AG_280662256.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5331.63	299	319	745	738	0.26		

End of Report

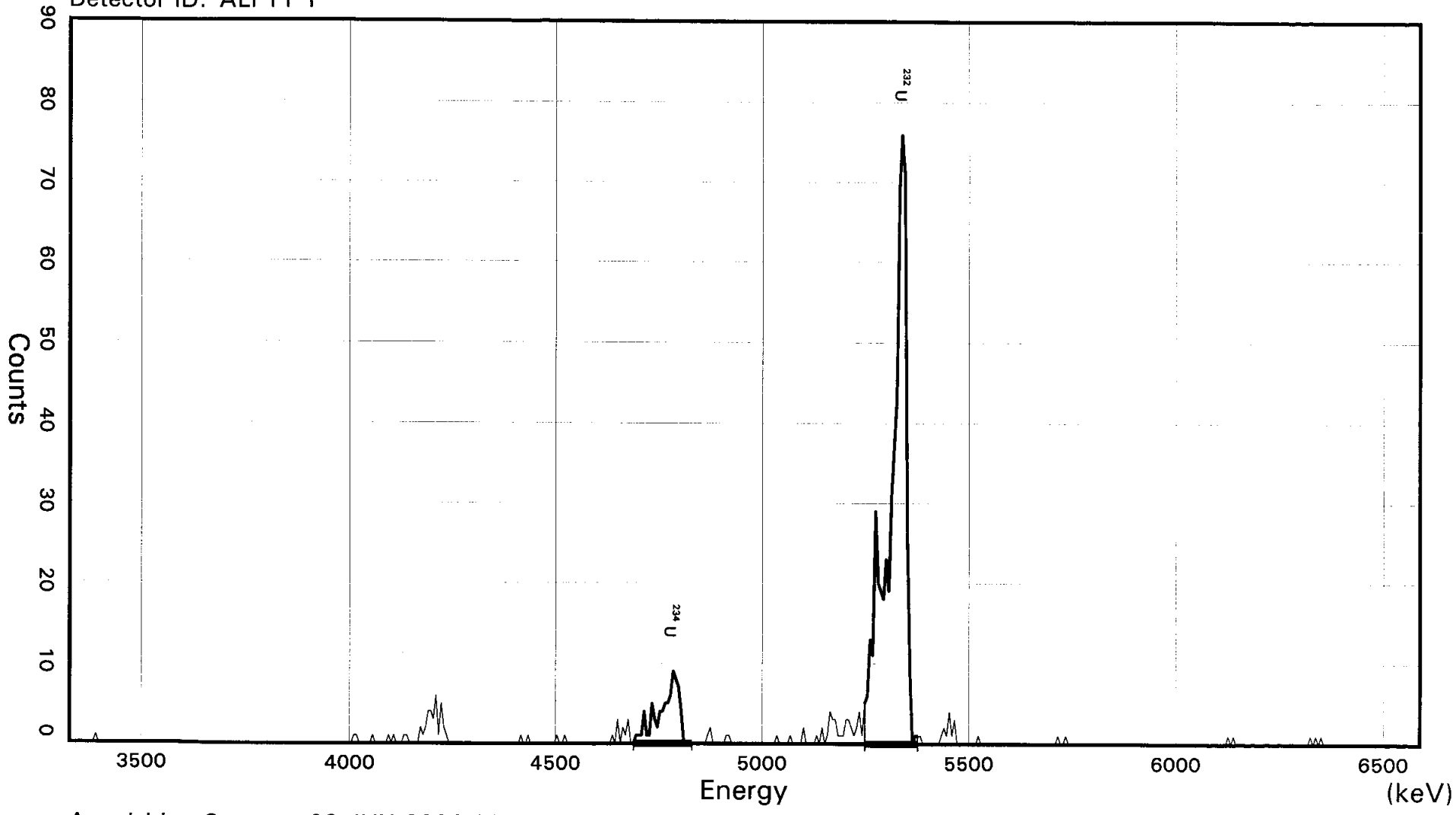
STL Richland WA.

U BRC

Sample ID: H57101AG

Detector ID: ALP11 1

Batch ID: 6146431



Acquisition Start: 28-JUN-2006 22:56:29.05

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:06.00

Energy Coefficients:

Offset: 3.30716E+03

Slope: 6.39329E+00

Quadrature: 2.85470E-05

SAMPLE IDENTIITY: H57101AG

TITLE : U BRC

DETECTOR : ALP11 1
CONFIGURATION NAME : $DISK1:[ALP11.SAMPLE]H57101AG_280662256.CNF;
1
ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:30

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:56:29 CALIB DATE : 01-JUN-2006 23:54:30

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:06

OFFSET : 3307.16 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 6.39329 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : 2.854700E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H57101AG

Detector: ALP11 1
Report Date: 29-Jun-06 02:16 AM
Acquire Date: 28-JUN-2006 22:56:29.05
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	531	8	0	2.646	5333.4	128.2	303	323	0.00	0.00	P
U-234	72	2	0	0.358	4787.8	140.9	216	238	0.00	0.00	P
U-235	2	1	0	0.009	4411.0	128.1	159	179	0.00	0.00	
U-238	33	1	0	0.164	4211.2	128.0	128	148	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H57101AG
Detector: ALP11 1
Report Date: 29-Jun-06 02:16 AM
Acquire Date: 28-JUN-2006 22:56:29.05

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	1		251	4		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	1		252	1		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	5	+	303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0		254	6	+	304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	0		255	13	+	305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	0		256	11	+	306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	0		257	29	+	307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	1		208	0		258	20	+	308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0	+	159	0		209	0		259	19	+	309	0		359	0		409	0		459	0		509
0		10	0		60	1		110	0	+	160	3		210	0		260	18	+	310	0		360	0		410	0		460	0		510
0		11	0		61	1		111	0	+	161	0		211	0		261	23	+	311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0	+	162	2		212	0		262	19	+	312	0		362	0		412	0		462	0		512
1		13	0		63	0		113	0	+	163	1		213	0		263	31	+	313	0		363	0		413	0		463			
0		14	0		64	0		114	0	+	164	3		214	0		264	37	+	314	0		364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0		215	0		265	43	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0	+	216	0		266	69	+	316	0		366	0		416	0		466			
0		17	0		67	1		117	0	+	167	1	+	217	0		267	76	+	317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	1	+	218	0		268	71	+	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	1	+	219	0		269	25	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	4	+	220	1		270	9	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	1	+	221	0		271	0	+	321	0		371	0		421	1		471			
0		22	0		72	0		122	0	+	172	1	+	222	0		272	1	+	322	0		372	0		422	0		472			
0		23	0		73	1		123	1	+	173	5	+	223	0		273	1		323	0		373	0		423	1		473			
0		24	0		74	0		124	0	+	174	3	+	224	0		274	1		324	0		374	0		424	0		474			
0		25	0		75	1		125	0	+	175	2	+	225	1		275	0		325	0		375	0		425	1		475			
0		26	0		76	0		126	1	+	176	4	+	226	0		276	0		326	1		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	4	+	227	0		277	0		327	0		377	0		427	0		477			
0		28	0		78	0	+	128	0	+	178	5	+	228	0		278	0		328	0		378	0		428	0		478			
0		29	0		79	1	+	129	0	+	179	5	+	229	0		279	0		329	1		379	0		429	0		479			
0		30	0		80	1	+	130	0		180	6	+	230	2		280	0		330	0		380	0		430	0		480			
0		31	0		81	0	+	131	0		181	9	+	231	0		281	0		331	0		381	0		431	0		481			
0		32	0		82	0	+	132	0		182	8	+	232	0		282	1		332	0		382	0		432	0		482			
0		33	0		83	0	+	133	0		183	7	+	233	0		283	2		333	0		383	0		433	0		483			
0		34	0		84	0	+	134	0		184	4	+	234	0		284	1		334	0		384	0		434	0		484			
0		35	0		85	2	+	135	0		185	0	+	235	1		285	4		335	0		385	0		435	0		485			
0		36	0		86	1	+	136	0		186	0	+	236	0		286	1		336	0		386	0		436	0		486			
0		37	0		87	2	+	137	1		187	0	+	237	2		287	3		337	0		387	0		437	0		487			
0		38	0		88	4	+	138	0		188	0		238	0		288	0		338	0		388	0		438	0		488			
0		39	0		89	4	+	139	0		189	0		239	1		289	0		339	0		389	0		439	0		489			
0		40	0		90	3	+	140	1		190	0		240	4		290	0		340	0		390	1		440	0		490			
0		41	0		91	6	+	141	0		191	0		241	3		291	0		341	0		391	0		441	0		491			
0		42	0		92	1	+	142	0		192	0		242	3		292	0		342	0		392	1		442	0		492			
0		43	0		93	5	+	143	0		193	0		243	1		293	0		343	0		393	0		443	0		493			
0		44	0		94	2	+	144	0		194	1		244	1		294	0		344	0		394	0		444	0		494			
0		45	0		95	1	+	145	0		195	2		245	1		295	0		345	0		395	0		445	0		495			
0		46	0		96	0	+	146	0		196	0		246	3		296	1		346	0		396	0		446	0		496			
0		47	0		97	0	+	147	0		197	0		247	3		297	0		347	0		397	0		447	0		497			
0		48	0		98	0	+	148	0		198	0		248	2		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	1		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	2		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:16:51

Configuration : $DISK1:[ALP11.SAMPLE]H57101AG_280662256.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:56:29
Sample ID : H57101AG Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP11 Detector geometry:
Elapsed live time: 0 03:20:06.00 Elapsed real time: 0 03:20:06.00 0.0%
Start energy : 3326.34 keV End energy : 6588.01 keV
Sensitivity : 4.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4778.58	72	0	51.15	229.91	216	22	6.00E-03	11.8	
2	0	5333.35	531	0	38.36	316.48	303	20	4.42E-02	4.3	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 02:16:54

Configuration	: $DISK1:[ALP11.SAMPLE]H57101AG_280662256.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.3		
Sample title	: U BRC		
Sample date	: 10-MAY-2006 12:00:00	Acquisition date	: 28-JUN-2006 22:56:29
Sample ID	: H57101AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP11	Detector geometry	:
Elapsed live time	: 0 03:20:06.00	Elapsed real time	: 0 03:20:06.00 0.0%
Energy tolerance	: 40.00 keV	Half life ratio	: 1.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Spline	Efficiencies at	: Peak Energy
Abundance limit	: 60.00		

Summary of Nuclide Activity

Total number of lines in spectrum	2	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	2	100.00%

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-234	2.45E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity :	0.000E+00	0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP11.SAMPLE]H57101AG_280662256.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4778.58	216	238	72	71	0.12		
5333.35	303	323	531	526	0.22		

End of Report

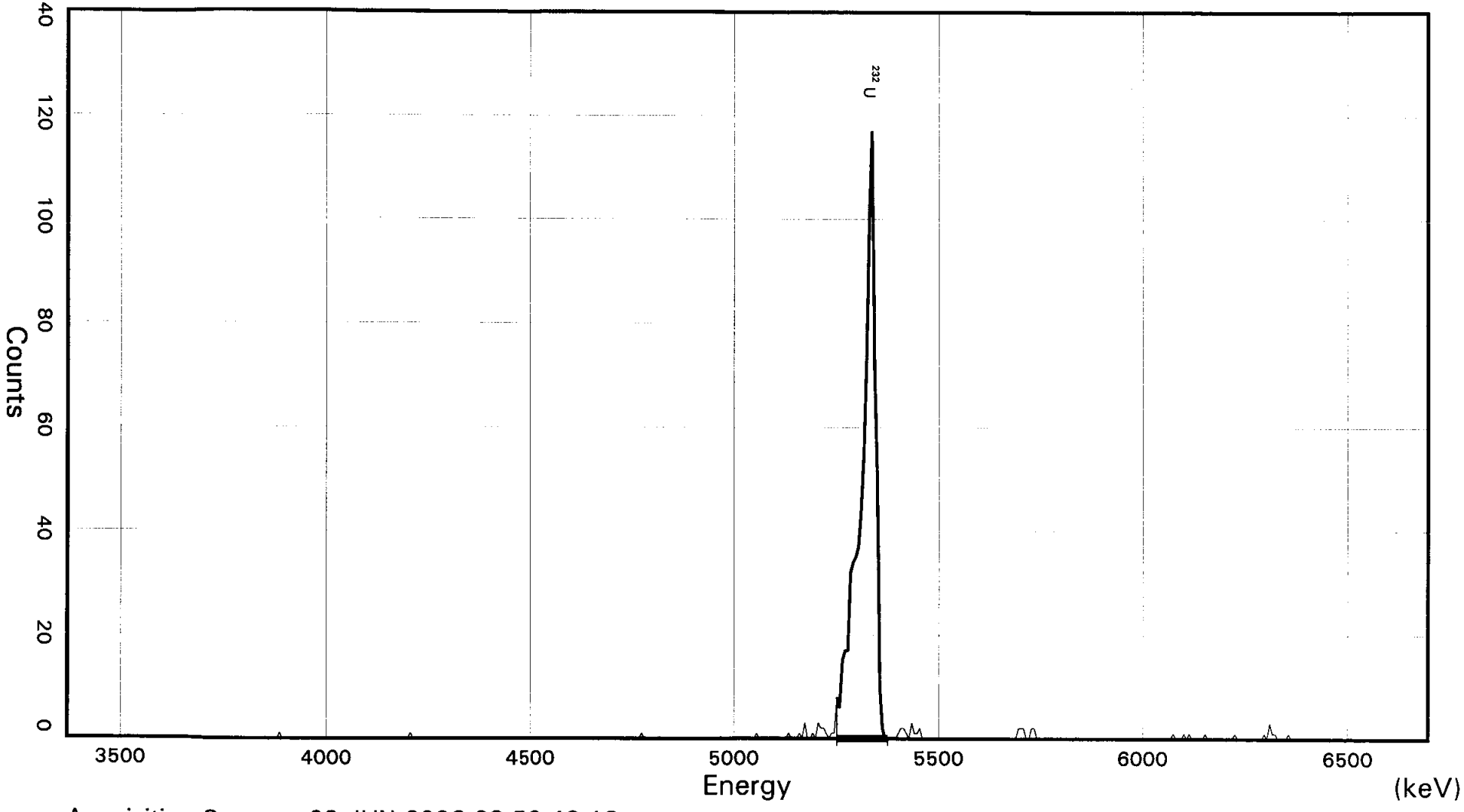
STL Richland WA.

U BRC

Sample ID: H57111AG

Detector ID: ALP12 1

Batch ID: 6146431



Acquisition Start: 28-JUN-2006 22:56:43.18

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:01.00

Energy Coefficients:

Offset: 3.35111E+03

Slope: 6.52326E+00

Quadrature: 1.72407E-05

SAMPLE IDENTIITY: H57111AG

TITLE : U BRC

DETECTOR : ALP12 1
CONFIGURATION NAME : $DISK1:[ALP12.SAMPLE]H57111AG_280662256.CNF;
1
ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:34

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:56:43 CALIB DATE : 01-JUN-2006 23:54:41

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:01

OFFSET : 3351.11 keV CONSTANT FWHM : 7.83333 Channels
SLOPE : 6.52326 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : 1.724070E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H57111AG

Detector: ALP12 1
Report Date: 29-Jun-06 02:17 AM
Acquire Date: 28-JUN-2006 22:56:43.18
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	726	12	0	3.618	5330.2	124.1	291	310	0.00	0.00	P
U-234	1	1	0	0.004	4784.7	124.1	207	226	0.00	0.00	
U-235	0	0	0	0.000	4407.9	124.0	150	169	0.00	0.00	
U-238	1	0	0	0.005	4208.1	124.0	119	138	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H57111AG
Detector: ALP12 1
Report Date: 29-Jun-06 02:17 AM
Acquire Date: 28-JUN-2006 22:56:43.18

Flags Key
Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0		201	0		251	55	+	301	0		351	0		401	1		451	0		501
		2	0		52	0		102	0	+	152	0		202	0		252	73	+	302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0	+	153	0		203	0		253	100	+	303	0		353	0		403	3		453	0		503
0		4	0		54	0		104	0	+	154	0		204	0		254	117	+	304	0		354	0		404	1		454	0		504
0		5	0		55	0		105	0	+	155	0		205	0		255	71	+	305	0		355	0		405	1		455	0		505
0		6	0		56	0		106	0	+	156	0		206	0		256	51	+	306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0	+	157	0	+	207	0		257	10	+	307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0	+	158	0	+	208	0		258	2	+	308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0	+	159	0	+	209	0		259	0	+	309	2		359	0		409	0		459	0		509
0		10	0		60	0		110	0	+	160	0	+	210	0		260	0		310	2		360	0		410	1		460	0		510
0		11	0		61	0		111	0	+	161	0	+	211	1		261	0		311	2		361	0		411	0		461	0		511
0		12	0		62	0		112	0	+	162	0	+	212	0		262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0	+	163	0	+	213	0		263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0	+	164	0	+	214	0		264	1		314	2		364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0	+	215	0		265	2		315	2		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0	+	216	0		266	2		316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0	+	217	0		267	1		317	0		367	1		417	0		467			
0		18	0		68	0		118	0	+	168	1	+	218	0		268	0		318	0		368	0		418	0		468			
0		19	0		69	0	+	119	0	+	169	0	+	219	0		269	3		319	0		369	0		419	0		469			
0		20	0		70	0	+	120	0		170	0	+	220	0		270	1		320	0		370	0		420	0		470			
0		21	0		71	0	+	121	0		171	0	+	221	0		271	1		321	0		371	1		421	0		471			
0		22	0		72	0	+	122	0		172	0	+	222	0		272	2		322	0		372	0		422	0		472			
0		23	0		73	0	+	123	0		173	0	+	223	1		273	0		323	0		373	1		423	0		473			
0		24	0		74	0	+	124	0		174	0	+	224	0		274	0		324	0		374	0		424	0		474			
0		25	0		75	0	+	125	0		175	0	+	225	0		275	0		325	0		375	0		425	0		475			
0		26	0		76	0	+	126	0		176	0	+	226	0		276	0		326	0		376	0		426	0		476			
0		27	0		77	0	+	127	0		177	0		227	1		277	0		327	0		377	0		427	0		477			
0		28	0		78	0	+	128	0		178	0		228	0		278	0		328	0		378	0		428	0		478			
0		29	0		79	0	+	129	0		179	0		229	3		279	0		329	0		379	1		429	0		479			
0		30	0		80	0	+	130	0		180	0		230	0		280	0		330	0		380	0		430	0		480			
0		31	0		81	1	+	131	0		181	0		231	0		281	0		331	0		381	0		431	0		481			
0		32	1		82	0	+	132	0		182	0		232	1		282	0		332	0		382	0		432	0		482			
0		33	0		83	0	+	133	0		183	0		233	0		283	0		333	0		383	0		433	0		483			
0		34	0		84	0	+	134	0		184	0		234	3		284	0		334	0		384	0		434	0		484			
0		35	0		85	0	+	135	0		185	0		235	2		285	0		335	0		385	0		435	0		485			
0		36	0		86	0	+	136	0		186	0		236	2		286	0		336	0		386	0		436	0		486			
0		37	0		87	0	+	137	0		187	0		237	1		287	0		337	0		387	0		437	0		487			
0		38	0		88	0	+	138	0		188	0		238	0		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	1		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	1		290	0		340	0		390	1		440	0		490			
0		41	0		91	0		141	0		191	0		241	8	+	291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	6	+	292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	15	+	293	0		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	17	+	294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	17	+	295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	32	+	296	0		346	0		396	0		446	0		496			
0		47	0		97	0		147	0		197	0		247	34	+	297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0		198	0		248	35	+	298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	37	+	299	0		349	0		399	0		449	0		499			
0		50	0		100	0	+	150	0		200	0		250	44	+	300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:17:02

```
Configuration     : $DISK1:[ALP12.SAMPLE]H57111AG_280662256.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:56:43
Sample ID         : H57111AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP12                Detector geometry:
Elapsed live time: 0 03:20:01.00         Elapsed real time: 0 03:20:01.00   0.0%
Start energy      :  3370.68 keV         End energy       :  6695.54 keV
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5330.25	726	0	32.62	303.15	291	19	6.05E-02	3.7	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 02:17:04

```
Configuration     : $DISK1:[ALP12.SAMPLE]H57111AG_280662256.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:56:43
Sample ID         : H57111AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP12                Detector geometry:
Elapsed live time: 0 03:20:01.00         Elapsed real time: 0 03:20:01.00   0.0%
Energy tolerance :    40.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP12.SAMPLE]H57111AG_280662256.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5330.24	291	310	726	724	0.07		

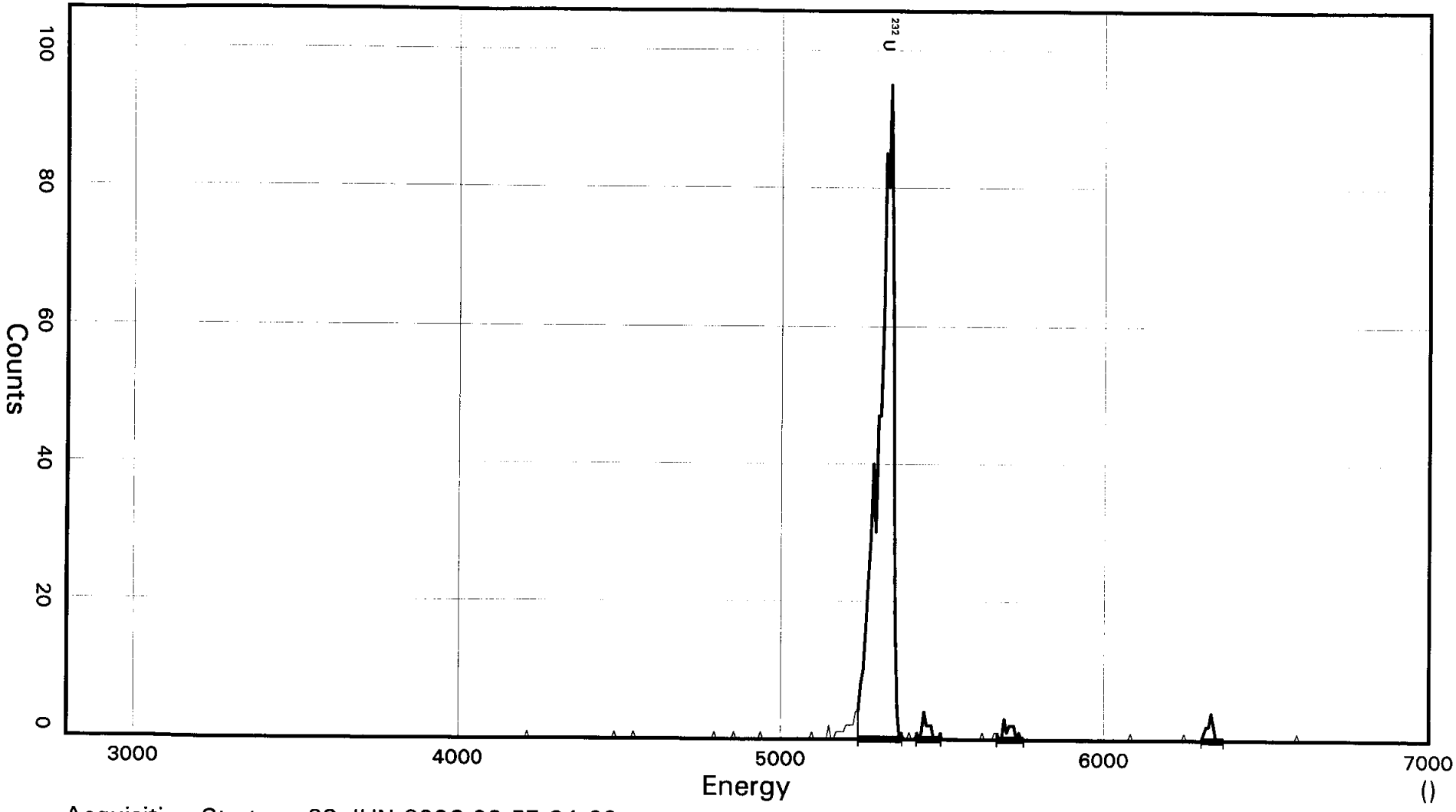
End of Report

STL Richland WA.

U BRC

Sample ID: H57121AG
Detector ID: ALP69 1

Batch ID: 6146431



Acquisition Start: 28-JUN-2006 22:57:04.68
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:02.00

Energy Coefficients:
Offset: 2.77160E+03
Slope: 7.51707E+00
Quadrature: 1.81482E-05

SAMPLE IDENTIITY: H57121AG

TITLE : U BRC

DETECTOR : ALP69 1
CONFIGURATION NAME : RDND06$DKA100:[ALP69.SAMPLE]H57121AG_280662257.CNF;1
ACQUIRE DATE of BACKGROUND: 12-JUN-2006 08:12:59

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:57:04 CALIB DATE : 12-JUN-2006 06:25:06

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:02

OFFSET : 2771.60 keV CONSTANT FWHM : 7.50000 Channels
SLOPE : 7.51707 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 1.814820E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H57121AG

Detector: ALP69 1
Report Date: 29-Jun-06 02:17 AM
Acquire Date: 28-JUN-2006 22:57:04.68
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	661	25	0	3.294	5326.4	135.5	328	346	0.00	0.00	P
U-234	1	4	0	0.003	4780.9	135.5	256	274	0.00	0.00	
U-235	0	2	0	-0.001	4404.1	135.4	205	223	0.00	0.00	
U-238	1	7	0	0.002	4204.3	135.4	179	197	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H57121AG
Detector: ALP69 1
Report Date: 29-Jun-06 02:17 AM
Acquire Date: 28-JUN-2006 22:57:04.68

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0		251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	0		252	0		302	1		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0		254	0		304	1		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0		255	0		305	4		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	2		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	2		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	2		358	0		408	0		458	1		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	1		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	1		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0	+	215	0	+	265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0	+	216	0	+	266	2		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0	+	217	0	+	267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0	+	218	0	+	268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0	+	219	1	+	269	1		319	0		369	0		419	0		469			
0		20	0		70	0		120	0		170	0	+	220	0	+	270	1		320	0		370	0		420	1		470			
0		21	0		71	0		121	0		171	0	+	221	0	+	271	1		321	0		371	0		421	2		471			
0		22	0		72	0		122	0		172	0	+	222	0	+	272	1		322	0		372	0		422	2		472			
0		23	0		73	0		123	0		173	0	+	223	0	+	273	2		323	0		373	0		423	4		473			
0		24	0		74	0		124	0		174	0		224	0	+	274	2		324	0		374	0		424	2		474			
0		25	0		75	0		125	0		175	0		225	0		275	2		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	0		276	2		326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	1		277	4		327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	1		228	0		278	4	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	8	+	329	1		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	10	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	16	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	23	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	29	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	40	+	334	1		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	30	+	335	1		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	1		236	0		286	47	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	47	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	1		288	61	+	338	3		388	0		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	85	+	339	1		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	80	+	340	2		390	1		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	95	+	341	2		391	0		441	0		491			
0		42	0		92	0		142	1	+	192	0		242	0		292	60	+	342	2		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	17	+	343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	4	+	344	1		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	0	+	345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	1		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0		247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0		198	0		248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	0		299	1		349	0		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:17:21

```
Configuration     : RDND06$DKA100:[ALP69.SAMPLE]H57121AG_280662257.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:57:04
Sample ID         : H57121AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP69                Detector geometry:
Elapsed live time: 0 03:20:02.00         Elapsed real time: 0 03:20:02.00   0.0%
Start energy      :  2794.15             End energy       :  6625.10
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5326.44	661	0	45.10	339.59	328	18	5.51E-02	3.9	
2	0	5446.63	12	0	30.07	355.56	352	10	1.00E-03	28.9	
3	0	5702.60	12	0	52.62	389.55	385	11	1.00E-03	28.9	
4	0	6327.47	12	0	30.07	472.50	469	9	1.00E-03	28.9	

VMS Nuclide Identification Report V3.1 Generated 29-JUN-2006 02:17:23

```
Configuration     : RDND06$DKA100:[ALP69.SAMPLE]H57121AG_280662257.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:57:04
Sample ID         : H57121AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP69                Detector geometry:
Elapsed live time: 0 03:20:02.00         Elapsed real time: 0 03:20:02.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                4
 Number of unidentified lines                     3
 Number of lines tentatively identified by NID    1       25.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP69.SAMPLE]H57121AG_280662257.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5326.43	328	346	661	657	0.16		
5446.63	352	362	12	13	-0.29		
5702.59	385	396	12	12	0.00		
6327.46	469	478	12	11	0.29		

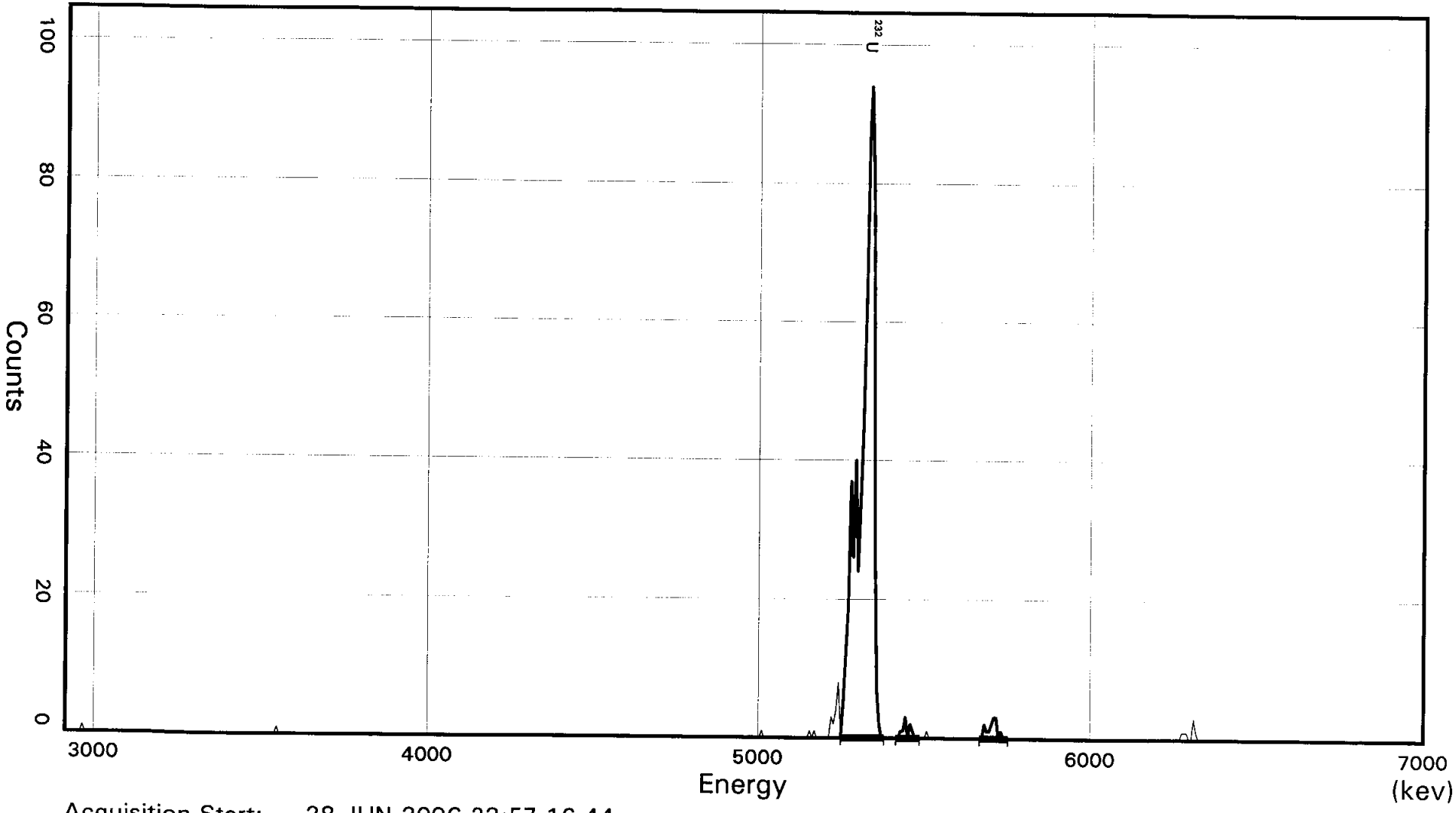
End of Report

STL Richland WA.

U BRC

Sample ID: H57131AG
Detector ID: ALP83 1

Batch ID: 6146431



Acquisition Start: 28-JUN-2006 22:57:16.44
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:04.00

Energy Coefficients:
Offset: 2.89305E+03
Slope: 7.36477E+00
Quadrature: -2.22552E-04

SAMPLE IDENTIITY: H57131AG

TITLE : U BRC

DETECTOR : ALP83 1
CONFIGURATION NAME : RDND06$DKA100:[ALP83.SAMPLE]H57131AG_280662257.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:07

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:57:16 CALIB DATE : 09-JUN-2006 06:21:49

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:04

OFFSET : 2893.05 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 7.36477 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.222552E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H57131AG

Detector: ALP83 1
Report Date: 29-Jun-06 02:17 AM
Acquire Date: 28-JUN-2006 22:57:16.44
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	610	20	0	3.041	5331.2	129.9	323	341	0.00	0.00	P
U-234	0	5	0	-0.002	4785.6	130.5	248	266	0.00	0.00	
U-235	0	2	0	-0.001	4408.8	130.9	196	214	0.00	0.00	
U-238	0	4	0	-0.002	4209.0	131.1	168	186	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H57131AG
Detector: ALP83 1
Report Date: 29-Jun-06 02:17 AM
Acquire Date: 28-JUN-2006 22:57:16.44

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	2		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	1		359	0		409	0		459	0		509
1		10	0		60	0		110	0		160	0	+	210	0	+	260	1		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	1		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0	+	265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	0	+	266	0		316	0		366	0		416	1		466			
0		17	0		67	0		117	0		167	0		217	0		267	0		317	0		367	0		417	1		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	0		318	0		368	0		418	1		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	3		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	2		320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	4		321	0		371	0		421	3		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	8		322	0		372	0		422	1		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	0	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	5	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	12	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	19	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	37	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	26	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	40	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	24	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	34	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	45	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	62	+	333	2		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	86	+	334	1		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	94	+	335	1		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	79	+	336	2		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	28	+	337	3		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	7	+	338	3		388	0		438	0		488			
0		39	1		89	0		139	0		189	0		239	0		289	2	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	1		290	0	+	340	1		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	0		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	0		294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	0		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0		247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	1		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	1		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	3		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:17:25

Configuration : RDND06$DKA100:[ALP83.SAMPLE]H57131AG_280662257.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:57:16
Sample ID : H57131AG Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP83 Detector geometry:
Elapsed live time: 0 03:20:04.00 Elapsed real time: 0 03:20:04.00 0.0%
Start energy : 2915.14 kev End energy : 6605.47 kev
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5331.15	610	0	44.19	334.43	323	18	5.08E-02	4.0	
2	0	5439.33	9	0	36.82	349.43	346	10	7.50E-04	33.3	
3	0	5699.42	13	0	51.55	385.55	381	12	1.08E-03	27.7	

VMS Nuclide Identification Report V3.1 Generated 29-JUN-2006 02:17:26

```
Configuration     : RDND06$DKA100:[ALP83.SAMPLE]H57131AG_280662257.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:57:16
Sample ID         : H57131AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP83                Detector geometry:
Elapsed live time: 0 03:20:04.00         Elapsed real time: 0 03:20:04.00   0.0%
Energy tolerance :    80.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                3
 Number of unidentified lines                     2
 Number of lines tentatively identified by NID    1       33.33%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			
	Grand Total Activity :		0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP83.SAMPLE]H57131AG_280662257.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5331.15	323	341	610	600	0.40		
5439.33	346	356	9	8	0.33		
5699.41	381	393	13	13	0.00		

End of Report

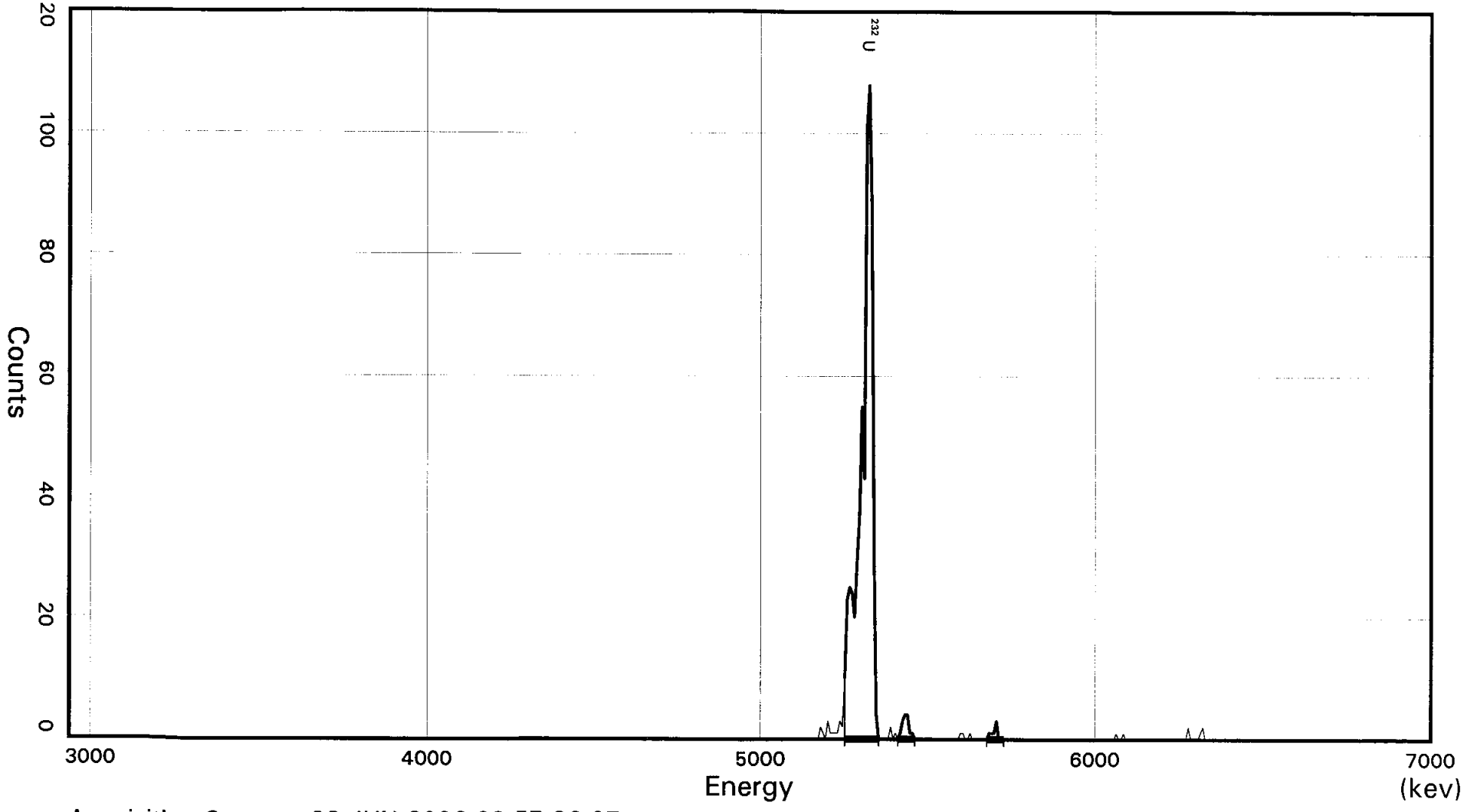
STL Richland WA.

U BRC

Sample ID: H57141AG

Detector ID: ALP84 1

Batch ID: 6146431



Acquisition Start: 28-JUN-2006 22:57:36.27

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:01.00

Energy Coefficients:

Offset: 2.91475E+03

Slope: 7.27474E+00

Quadrature: -1.17694E-04

SAMPLE IDENTIITY: H57141AG

TITLE : U BRC

DETECTOR : ALP84 1
CONFIGURATION NAME : RDND06$DKA100:[ALP84.SAMPLE]H57141AG_280662257.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:10

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:57:36 CALIB DATE : 09-JUN-2006 06:21:40

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:01

OFFSET : 2914.75 keV CONSTANT FWHM : 5.00000 Channels
SLOPE : 7.27474 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.117694E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H57141AG

Detector: ALP84 1
Report Date: 29-Jun-06 02:17 AM
Acquire Date: 28-JUN-2006 22:57:36.27
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	600	11	0	2.995	5321.4	100.8	323	337	0.00	0.00	P
U-234	0	2	0	-0.001	4775.8	101.0	247	261	0.00	0.00	
U-235	0	2	0	-0.001	4399.0	101.2	195	209	0.00	0.00	
U-238	0	0	0	0.000	4199.2	94.0	168	181	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H57141AG
Detector: ALP84 1
Report Date: 29-Jun-06 02:17 AM
Acquire Date: 28-JUN-2006 22:57:36.27

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	1		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0		210	0	+	260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	0	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	0		262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	2		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0		264	1		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0		265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	0		266	3		316	0		366	0		416	2		466			
0		17	0		67	0		117	0		167	0		217	0		267	1		317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	1		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	1		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	1		320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	3		321	1		371	0		421	1		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	2		322	1		372	0		422	2		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	10	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	23	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	25	+	325	1		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	24	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	20	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	29	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	37	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	55	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	43	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0		182	0		232	0		282	101	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0		183	0		233	0		283	108	+	333	1		383	0		433	0		483			
0		34	0		84	0		134	0		184	0		234	0		284	87	+	334	1		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	31	+	335	1		385	0		435	0		485			
0		36	0		86	0		136	0		186	0		236	0		286	4	+	336	3		386	1		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	0		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	0		339	0		389	1		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	0		340	0		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	2		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	0		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	0		294	1		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	1		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	3		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	4		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	4		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	1		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:17:39

Configuration : RDND06$DKA100:[ALP84.SAMPLE]H57141AG_280662257.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:57:36
Sample ID : H57141AG Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP84 Detector geometry:
Elapsed live time: 0 03:20:01.00 Elapsed real time: 0 03:20:01.00 0.0%
Start energy : 2936.57 kev End energy : 6608.56 kev
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5321.41	600	0	29.10	332.62	323	14	5.00E-02	4.1	
2	0	5432.10	13	0	21.82	348.00	345	7	1.08E-03	27.7	
3	0	5696.88	7	0	29.10	384.83	382	7	5.83E-04	37.8	

VMS Nuclide Identification Report V3.1 Generated 29-JUN-2006 02:17:41

```
Configuration     : RDND06$DKA100:[ALP84.SAMPLE]H57141AG_280662257.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:57:36
Sample ID         : H57141AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP84                Detector geometry:
Elapsed live time: 0 03:20:01.00         Elapsed real time: 0 03:20:01.00   0.0%
Energy tolerance :    80.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                3
 Number of unidentified lines                     2
 Number of lines tentatively identified by NID    1       33.33%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP84.SAMPLE]H57141AG_280662257.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5321.41	323	337	600	597	0.12		
5432.10	345	352	13	14	-0.28		
5696.87	382	389	7	6	0.38		

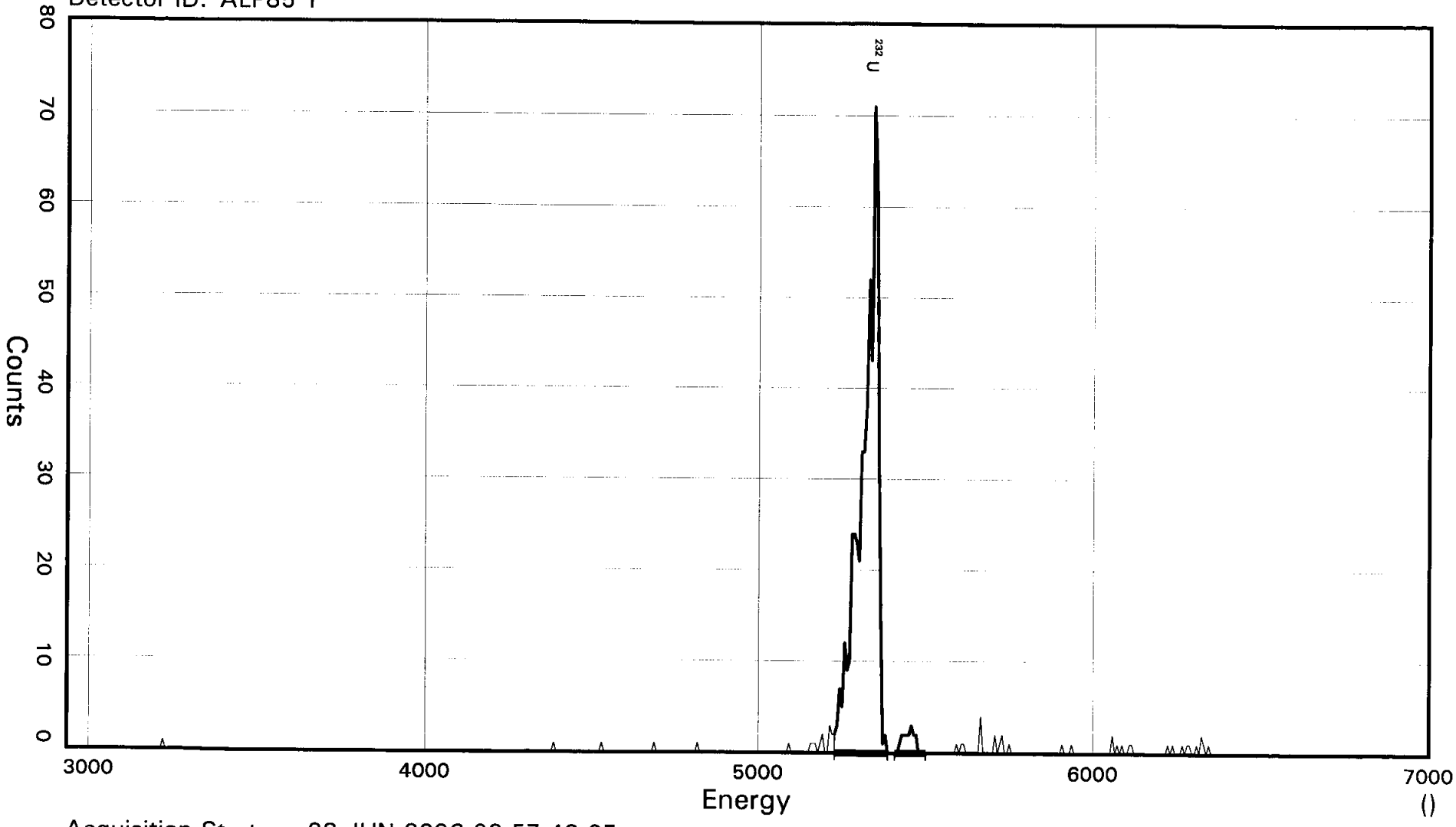
End of Report

STL Richland WA.

U BRC

Sample ID: H6AT01AA
Detector ID: ALP85 1

Batch ID: 6146431



Acquisition Start: 28-JUN-2006 22:57:48.05
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:05.00

Energy Coefficients:
Offset: 2.91304E+03
Slope: 7.16241E+00
Quadrature: 6.93387E-06

SAMPLE IDENTITY: H6AT01AA

TITLE : U BRC

DETECTOR : ALP85 1
CONFIGURATION NAME : RDND06$DKA100:[ALP85.SAMPLE]H6AT01AA_280662257.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:12

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:57:48 CALIB DATE : 09-JUN-2006 06:21:45

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:05

OFFSET : 2913.04 keV CONSTANT FWHM : 9.83333 Channels
SLOPE : 7.16241 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 6.933870E-06 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H6AT01AA

Detector: ALP85 1
Report Date: 29-Jun-06 02:17 AM
Acquire Date: 28-JUN-2006 22:57:48.05
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	528	45	0	2.621	5333.1	157.7	323	345	0.00	0.00	P
U-234	2	5	0	0.008	4787.5	157.7	247	269	0.00	0.00	
U-235	1	1	0	0.005	4410.7	157.6	194	216	0.00	0.00	
U-238	0	0	0	0.000	4210.9	157.6	166	188	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H6AT01AA
Detector: ALP85 1
Report Date: 29-Jun-06 02:17 AM
Acquire Date: 28-JUN-2006 22:57:48.05

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	2		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	2		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	2		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	1		304	2		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	3		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	1	+	206	0	+	256	0		306	2		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	2		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	1		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	1		314	0		364	0		414	1		464			
0		15	0		65	0		115	0		165	0	+	215	0	+	265	1		315	0		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0	+	216	1	+	266	0		316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0		217	0	+	267	1		317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	0	+	268	2		318	0		368	1		418	1		468			
0		19	0		69	0		119	0	+	169	0		219	0	+	269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	0		320	0		370	0		420	1		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	3		321	0		371	0		421	1		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	2		322	0		372	1		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	2	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	3	+	324	1		374	0		424	1		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	7	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	1		226	0		276	5	+	326	1		376	0		426	2		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	12	+	327	1		377	0		427	1		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	9	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	10	+	329	0		379	0		429	1		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	24	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	24	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	23	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	21	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	33	+	334	4		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	33	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	38	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	52	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	43	+	338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	71	+	339	0		389	2		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	63	+	340	2		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	34	+	341	0		391	1		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	14	+	342	1		392	0		442	0		492			
1		43	0		93	0		143	0		193	0		243	0		293	1	+	343	2		393	1		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	2	+	344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	0		346	1		396	1		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	0		347	0		397	1		447	0		497			
0		48	0		98	0		148	0	+	198	1	+	248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	1		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:17:57

```
Configuration     : RDND06$DKA100:[ALP85.SAMPLE]H6AT01AA_280662257.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:57:48
Sample ID         : H6AT01AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP85                Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Start energy      :  2934.52             End energy       :  6582.01
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5333.07	528	0	57.30	337.77	323	22	4.40E-02	4.4	
2	0	5449.40	16	0	35.81	354.00	348	13	1.33E-03	25.0	

VMS Nuclide Identification Report V3.1 Generated 29-JUN-2006 02:17:58

```
Configuration     : RDND06$DKA100:[ALP85.SAMPLE]H6AT01AA_280662257.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:57:48
Sample ID         : H6AT01AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP85                Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP85.SAMPLE]H6AT01AA_280662257.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.06	323	345	528	524	0.17		
5449.39	348	361	16	16	0.00		

End of Report

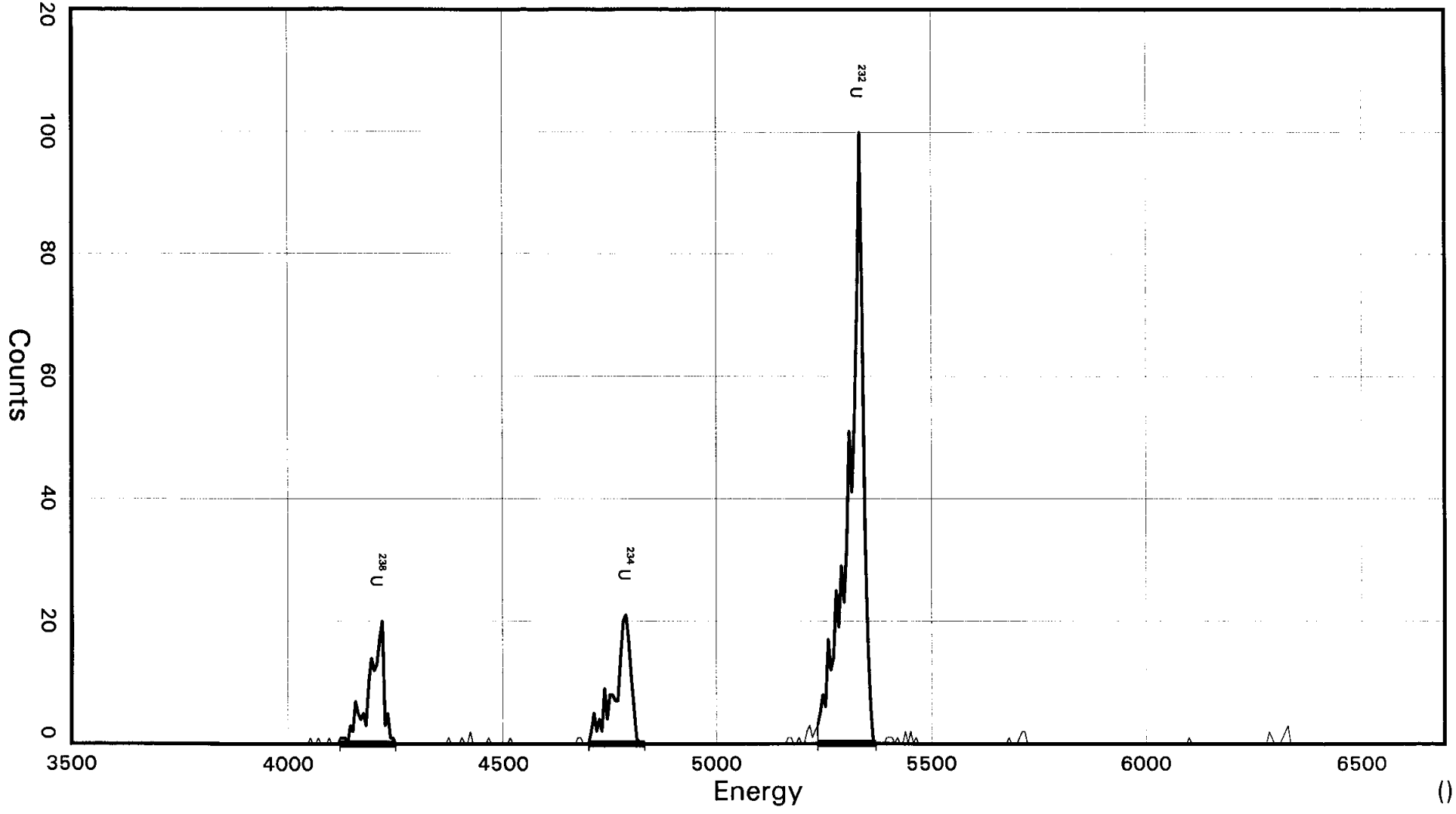
STL Richland WA.

U BRC

Sample ID: H6AT01AC

Detector ID: ALP87 1

Batch ID: 6146431



()

Acquisition Start: 28-JUN-2006 22:57:59.77

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:

Offset: 3.52509E+03

Slope: 6.19894E+00

Quadrature: -2.09215E-05

SAMPLE IDENTIITY: H6AT01AC

TITLE : U BRC

DETECTOR : ALP87 1
CONFIGURATION NAME : RDND06$DKA100:[ALP87.SAMPLE]H6AT01AC_2806622
57.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:13

REPORT DATE : 29-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 22:57:59 CALIB DATE : 09-JUN-2006 06:21:54

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:03

OFFSET : 3525.09 keV CONSTANT FWHM : 9.33333 Channels
SLOPE : 6.19894 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.209215E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H6AT01AC

Detector: ALP87 1
Report Date: 29-Jun-06 02:18 AM
Acquire Date: 28-JUN-2006 22:57:59.77
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	635	7	0	3.167	5328.0	136.1	276	298	0.00	0.00	P
U-234	147	2	0	0.733	4782.4	130.0	190	211	0.00	0.00	P
U-235	4	0	0	0.020	4405.6	136.3	127	149	0.00	0.00	
U-238	127	0	0	0.635	4205.8	130.1	96	117	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H6AT01AC
Detector: ALP87 1
Report Date: 29-Jun-06 02:18 AM
Acquire Date: 28-JUN-2006 22:57:59.77

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	2	+	101	0		151	7	+	201	0		251	0		301	0		351	0		401	1		451	0		501
		2	0		52	7	+	102	1		152	14	+	202	0		252	1		302	1		352	0		402	2		452	0		502
0		3	0		53	5	+	103	0		153	20	+	203	0		253	1		303	2		353	0		403	3		453	0		503
0		4	0		54	4	+	104	0		154	21	+	204	0		254	1		304	2		354	0		404	0		454	0		504
0		5	0		55	5	+	105	0		155	17	+	205	0		255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	3	+	106	0		156	11	+	206	0		256	1		306	0		356	0		406	0		456	0		506
0		7	0		57	10	+	107	0		157	6	+	207	0		257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	14	+	108	0		158	1	+	208	0		258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	12	+	109	0		159	0	+	209	0		259	2		309	0		359	0		409	0		459	0		509
0		10	0		60	13	+	110	1		160	0	+	210	0		260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	17	+	111	0		161	0		211	0		261	2		311	0		361	0		411	0		461	0		511
0		12	0		62	20	+	112	0		162	0		212	0		262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	3	+	113	0		163	0		213	0		263	1		313	0		363	0		413	0		463			
0		14	0		64	5	+	114	0		164	0		214	0		264	0		314	0		364	0		414	0		464			
0		15	0		65	1	+	115	0		165	0		215	1		265	0		315	0		365	0		415	0		465			
0		16	0		66	1	+	116	0		166	0		216	1		266	0		316	0		366	1		416	0		466			
0		17	0		67	0		117	0		167	0		217	0		267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	0		268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0		219	1		269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0		170	0		220	0		270	0		320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0		221	0		271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	2		272	0		322	0		372	0		422	0		472			
0		23	0		73	0		123	0		173	0		223	3		273	0		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	1		274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	2		275	0		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	3	+	276	0		326	0		376	0		426	0		476			
0		27	0		77	0	+	127	0		177	0		227	5	+	277	0		327	0		377	0		427	0		477			
0		28	0		78	0	+	128	0		178	0		228	8	+	278	0		328	0		378	0		428	0		478			
0		29	0		79	0	+	129	0		179	0		229	6	+	279	0		329	0		379	0		429	0		479			
0		30	0		80	0	+	130	0		180	0		230	17	+	280	0		330	0		380	0		430	0		480			
0		31	0		81	0	+	131	0		181	0		231	12	+	281	0		331	0		381	0		431	0		481			
0		32	0		82	0	+	132	0		182	0		232	14	+	282	0		332	0		382	0		432	0		482			
0		33	0		83	0	+	133	0		183	0		233	25	+	283	0		333	0		383	0		433	0		483			
0		34	0		84	0	+	134	0		184	0		234	19	+	284	0		334	0		384	0		434	0		484			
0		35	1		85	0	+	135	0		185	0		235	29	+	285	0		335	0		385	0		435	0		485			
0		36	0		86	0	+	136	1		186	0		236	23	+	286	0		336	0		386	0		436	0		486			
0		37	0		87	1	+	137	1		187	0		237	32	+	287	0		337	0		387	0		437	0		487			
0		38	1		88	0	+	138	0		188	0		238	51	+	288	0		338	0		388	0		438	0		488			
0		39	0		89	0	+	139	0		189	0		239	41	+	289	0		339	0		389	0		439	0		489			
0		40	0		90	0	+	140	0	+	190	0		240	53	+	290	0		340	0		390	0		440	0		490			
0		41	0		91	0	+	141	2	+	191	0		241	72	+	291	0		341	0		391	0		441	0		491			
0		42	1		92	1	+	142	5	+	192	0		242	100	+	292	0		342	0		392	0		442	0		492			
0		43	0		93	0	+	143	2	+	193	0		243	69	+	293	0		343	0		393	0		443	0		493			
0		44	0		94	0	+	144	4	+	194	0		244	33	+	294	0		344	0		394	0		444	0		494			
0		45	0		95	2	+	145	2	+	195	0		245	16	+	295	0		345	0		395	0		445	0		495			
0		46	1	+	96	0	+	146	9	+	196	0		246	6	+	296	0		346	0		396	2		446	0		496			
0		47	1	+	97	0	+	147	4	+	197	0		247	0	+	297	0		347	0		397	1		447	0		497			
0		48	1	+	98	0	+	148	8	+	198	0		248	0		298	1		348	0		398	0		448	0		498			
0		49	0	+	99	0	+	149	8	+	199	0		249	0		299	0		349	0		399	0		449	0		499			
0		50	3	+	100	0		150	7	+	200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 02:18:05

Configuration : RDND06$DKA100:[ALP87.SAMPLE]H6AT01AC_280662257.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:57:59
Sample ID : H6AT01AC Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP87 Detector geometry:
Elapsed live time: 0 03:20:03.00 Elapsed real time: 0 03:20:03.00 0.0%
Start energy : 3543.68 End energy : 6693.46
Sensitivity : 4.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4207.08	127	0	43.39	110.06	96	21	1.06E-02	8.9	
2	0	4786.13	147	0	37.19	203.57	190	21	1.22E-02	8.2	
3	0	5328.01	635	0	43.39	291.13	276	22	5.29E-02	4.0	

VMS Nuclide Identification Report V3.1 Generated 29-JUN-2006 02:18:06

```
Configuration     : RDND06$DKA100:[ALP87.SAMPLE]H6AT01AC_280662257.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 22:57:59
Sample ID         : H6AT01AC             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP87                Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                3
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    3      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-234	2.45E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-238	4.47E+09Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity :	0.000E+00	0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP87.SAMPLE]H6AT01AC_280662257.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4207.07	96	117	127	128	-0.09		
4786.12	190	211	147	148	-0.08		
5328.01	276	298	635	634	0.04		

End of Report

THORIUM

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/29/2006 1:09:32 PM

Lot No., Due Date: J6E250379; 06/22/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6146436; RTHISO Thiso by ALP

SDG, Matrix: 31758; FILTER

1.0 COC

1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions? Yes ✓ No N/A

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? Yes ✓ No N/A

2.2 Are the QC appropriate for the analysis included in the batch? Yes ✓ No N/A

2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? Yes ✓ No N/A

2.4 Does the Worksheets include a Tracer Vial label for each sample? Yes ✓ No N/A

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits? Yes ✓ No N/A

3.2 Is the LCS result, yield, and MDA within contract limits? Yes ✓ No N/A

3.3 Are the MS/MSD results, yields, and MDA within contract limits? Yes No N/A ✓

3.4 Are the duplicate result, yields, and MDAs within contract limits? Yes No N/A ✓

3.5 Are the sample yields and MDAs within contract limits? Yes ✓ No N/A

4.0 Raw Data

4.1 Were results calculated in the correct units? Yes ✓ No N/A

4.2 Were analysis volumes entered correctly? Yes ✓ No N/A

4.3 Were Yields entered correctly? Yes No N/A ✓

4.4 Were spectra reviewed/meet contractual requirements? Yes ✓ No N/A

4.5 Were raw counts reviewed for anomalies? Yes ✓ No N/A

5.0 Other

5.1 Are all nonconformances included and noted? Yes No N/A ✓

5.2 Are all required forms filled out? Yes ✓ No N/A

5.3 Was the correct methodology used? Yes ✓ No N/A

5.4 Was transcription checked? Yes ✓ No N/A

5.5 Were all calculations checked at a minimum frequency? Yes ✓ No N/A

5.6 Are worksheet entries complete and correct? Yes ✓ No N/A

6.0 Comments on any No response:

Hood rain in samples H5709. H571F. H5710. H5711 as noted in an earlier NCM.

First Level Review Pam Anderson **Date** 6 29 06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6146436

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	/		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	/		
3. Are the correct isotopes reported?	/		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	/		
2. Does the blank result meet the Contract criteria?	/		
3. Is the blank result < the Contract Detection Limit?	/		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			/
5. Is the LCS recovery with contract acceptance criteria?	/		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	/		
8. Do the MS/MSD results and yields meet acceptance criteria?			/
9. Do the duplicate sample results and yields meet acceptance criteria?			/
C. Other			
1. Are all Nonconformances included and noted?			/
2. Are all required forms filled out?	/		
3. Was the correct methodology used?	/		
4. Was transcription checked?	/		
5. Were all calculations checked at a minimum frequency?	/		
6. Were units checked?	/		

Comments on any "No" response:

Second Level Review: Sherryl A. Adam Date: 6-29-06

STL RICHLAND

6/15/2006 3:26:37 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

9N ThIso PrpRc5016, SepRC~~5084~~(5003) 5087 J.C 6/16/06

S1 Thorium-228,230,232 by Alpha Spec

01 STANDARD TEST SET

AnalyDueDate: 06/21/2006

Balance Id:1120373922

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: HansenM

Batch: 6146436 **FILTER** **pCi/sampl** **PM, Quote: SA , 63174**

SEQ Batch, Test: None

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
114 **1 H5709-1-AA** J6E250379-1-SAMP 05/10/2006 10:20	0.833sa,g	500.31sa,g	50.37g,in	0.0839g	THTF0608 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
116 **2 H571F-1-AA** J6E250379-2-SAMP 05/10/2006 10:35	0.833sa,g	502.43sa,g	50.06g,in	0.083g	THTF0609 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
117 **3 H571G-1-AA** J6E250379-3-SAMP 05/10/2006 10:50	0.833sa,g	501.65sa,g	50.06g,in	0.0831g	THTF0610 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
119 **4 H571M-1-AA** J6E250379-4-SAMP 05/10/2006 11:25	0.833sa,g	501.39sa,g	50.44g,in	0.0838g	THTF0611 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
120 **5 H571N-1-AA** J6E250379-5-SAMP 05/10/2006 12:05	0.833sa,g	500.72sa,g	50.07g,in	0.0833g	THTF0612 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
121 **6 H571Q-1-AA** J6E250379-6-SAMP 05/10/2006 12:20	0.833sa,g	501.55sa,g	50.37g,in	0.0837g	THTF0613 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
122 **7 H571R-1-AA** J6E250379-7-SAMP 05/10/2006 12:25	0.833sa,g	503.75sa,g	50.14g,in	0.0829g	THTF0614 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL RICHLAND

6/15/2006 3:26:37 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

9N Thlso PrpRc5016, SepRC5084(5003)
S1 Thorium-228,230,232 by Alpha Spec
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146436 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
173 **8 H571T-1-AA** J6E250379-8-SAMP	0.833sa,g	501.13sa,g	50.85g,in	0.0845g	THTF0615 06/15/06,pd 10/04/04,r					
05/10/2006 12:10		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
174 **9 H571V-1-AA** J6E250379-9-SAMP	0.833sa,g	501.34sa,g	50.11g,in	0.0833g	THTF0616 06/15/06,pd 10/04/04,r					
05/10/2006 10:10		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
175 **10H571X-1-AA** J6E250379-10-SAMP	0.833sa,g	511.39sa,g	50.82g,in	0.0828g	THTF0617 06/15/06,pd 10/04/04,r					
05/10/2006 10:30		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
176 **11H5710-1-AA** J6E250379-11-SAMP	0.833sa,g	506.21sa,g	50.03g,in	0.0823g	THTF0618 06/15/06,pd 10/04/04,r					
05/10/2006 10:45		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
177 **12H5711-1-AA** J6E250379-12-SAMP	0.833sa,g	500.36sa,g	50.64g,in	0.0843g	THTF0619 06/15/06,pd 10/04/04,r					
05/10/2006 11:20		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
178 **13H5712-1-AA** J6E250379-13-SAMP	0.833sa,g	500.63sa,g	50.19g,in	0.0835g	THTF0620 06/15/06,pd 10/04/04,r					
05/10/2006 12:00		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
179 **14H5713-1-AA** J6E250379-14-SAMP	0.833sa,g	500.78sa,g	50.49g,in	0.084g	THTF0621 06/15/06,pd 10/04/04,r					
05/10/2006 12:15		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:

STL RICHLAND

6/15/2006 3:26:38 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

9N Thiso PrpRc5016, SepRC5084(5003)
S1 Thorium-228,230,232 by Alpha Spec
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146436 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15H5714-1-AA J6E250379-15-SAMP 05/10/2006 10:15	0.833sa,g	501.49sa,g	50.71g,in	0.0842g	THTF0622 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
16H6AW1-1-AA-B J6E260000-436-BLK 05/10/2006 10:20			1.00sa,in	1.00sa	THTF0623 06/15/06,pd 10/04/04,r					
		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:
17H6AW1-1-AC-C J6E260000-436-LCS 05/10/2006 10:20			1.00sa,in	1.00sa	THSO0077 06/15/06,pd 10/04/04,r					
		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:

Comments: H5709-SAMP Comments Please note that a yellowish orange substance fell into or around samples H5709, H571F, H5710, & H5711, substance came from inside the hood possibly caused from the recent rainfall mH 6-15-06

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H57091AA-SAMP Constituent List:

Th-228	RDL:1	pCi/sam	LCL:	UCL:	RPD:	Th-230	RDL:1	pCi/sam	LCL:	UCL:	RPD:
Th-232	RDL:1	pCi/sam	LCL:	UCL:	RPD:	Th-234	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20

H6AW11AA-BLK:

Th-228	RDL:1	pCi/sam	LCL:	UCL:	RPD:	Th-230	RDL:1	pCi/sam	LCL:	UCL:	RPD:
Th-232	RDL:1	pCi/sam	LCL:	UCL:	RPD:	Th-234	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20

H6AW11AC-LCS:

Th-230	RDL:1	pCi/sam	LCL:70	UCL:130	RPD:20	Th-234	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20

H57091AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

6/29/2006 12:08:07 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/29/2005, 7/4/2006, Batch: '6146436', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6146436						
AC		**CalcC**	**HansenM**	6/13/2006 1:38:58 PM		
SC			HansenM	InPrep2	6/13/2006 1:38:58 PM	RICH-RC-5016 REVISION 5
SC			hansenm	IsBatched	6/14/2006 2:31:23 PM	ICOC_RADCALC v4.8.24
SC			HansenM	Prep2C	6/16/2006 7:45:30 AM	RICH-RC-5016 REVISION 5
SC			FABREM	Sep2C	6/27/2006 7:41:10 PM	RICH-RC-5039 REV 6
SC			DAWKINSO	InCnt1	6/27/2006 10:30:12 PM	RICH-RD-0008 REVISION 4
SC			DAWKINSO	CalcC	6/28/2006 10:22:10 PM	RICH-RD-0008 REVISION 4
AC			**HansenM**	6/16/2006 7:45:30		
AC			**FABREM**	6/27/2006 7:41:10 PM		
AC			**DAWKINSO**	6/27/2006 10:30:12		
AC			**DAWKINSO**	6/28/2006 10:22:10		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.18

6/29/2006 12:08:06 PM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
31758	**9H570910**			**J6E2503791**	000450	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM				
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**1.0298E+01**	2.869E+00	3.064E+00	8.319E+00	PCI/SA	1.0	1.0E+0	2.093E-2
BETA	BDS8		0	6/20/2006 2:03:16 PM	**4.4442E+01**	2.683E+00	4.815E+00	6.021E+00	PCI/SA	1.0	1.0E+0	3.346E-2
RA-226	BXTE		0	6/24/2006 1:25:01 PM	**2.9344E-01**	2.202E-01	2.222E-01	7.659E-01	PCI/SA	0.904	1.0E+0	2.504E-1
RA-228	BXTF		0	6/27/2006 6:50:22 AM	**8.0395E-01**	6.103E-01	6.32E-01	2.817E+00	PCI/SA	0.835	1.0E+0	2.504E-1
TH-228	9NS1		0	6/28/2006 1:29:06 AM	**3.0647E-01**	1.695E-01	1.718E-01	5.607E-01	PCI/SA	0.619	1.0E+0	3.386E-2
TH-230	9NS1		0	6/28/2006 1:29:06 AM	**2.6391E-01**	1.346E-01	1.368E-01	3.885E-01	PCI/SA	0.619	1.0E+0	3.386E-2
TH-232	9NS1		0	6/28/2006 1:29:06 AM	**1.0556E-01**	7.464E-02	7.528E-02	1.43E-01	PCI/SA	0.619	1.0E+0	3.386E-2
U-234	7YSR		0	6/29/2006 12:34:31	**8.4682E-01**	2.967E-01	3.044E-01	5.565E-01	PCI/SA	1.047	1.0E+0	3.25E-2
U-235	7YSR		0	6/29/2006 12:34:31	**7.8769E-02**	1.004E-01	1.006E-01	4.716E-01	PCI/SA	1.047	1.0E+0	3.25E-2
U-238	7YSR		0	6/29/2006 12:34:31	**7.4835E-01**	2.799E-01	2.862E-01	5.565E-01	PCI/SA	1.047	1.0E+0	3.25E-2
31758	**9H571010**			**J6E25037911**	P-0623	FILTER	5/25/2006 10:00:00	5/10/2006 10:45:00 AM				
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**7.1046E+01**	6.941E+00	1.016E+01	9.566E+00	PCI/SA	1.0	1.0E+0	2.073E-2
BETA	BDS8		0	6/20/2006 4:02:16 PM	**1.549E+02**	4.677E+00	1.173E+01	6.441E+00	PCI/SA	1.0	1.0E+0	3.266E-2
RA-226	BXTE		0	6/24/2006 2:02:00 PM	**1.3001E+00**	2.242E-01	2.606E-01	4.298E-01	PCI/SA	0.943	1.0E+0	2.486E-1
RA-228	BXTF		0	6/27/2006 6:51:14 AM	**6.8613E+00**	7.753E-01	9.222E-01	1.757E+00	PCI/SA	0.839	1.0E+0	2.486E-1
TH-228	9NS1		0	6/28/2006 3:43:59 AM	**1.307E+00**	2.813E-01	3.063E-01	4.182E-01	PCI/SA	0.698	1.0E+0	3.233E-2
TH-230	9NS1		0	6/28/2006 3:43:59 AM	**1.6415E+00**	3.009E-01	3.373E-01	3.228E-01	PCI/SA	0.698	1.0E+0	3.233E-2
TH-232	9NS1		0	6/28/2006 3:43:59 AM	**9.9567E-01**	2.361E-01	2.536E-01	3.228E-01	PCI/SA	0.698	1.0E+0	3.233E-2
U-234	7YSR		0	6/29/2006 12:36:32	**9.8683E+00**	1.17E+00	1.432E+00	7.789E-01	PCI/SA	0.646	1.0E+0	3.176E-2
U-235	7YSR		0	6/29/2006 12:36:32	**2.4808E-01**	1.969E-01	1.979E-01	6.602E-01	PCI/SA	0.646	1.0E+0	3.176E-2
U-238	7YSR		0	6/29/2006 12:36:32	**4.5207E+00**	7.922E-01	8.778E-01	6.602E-01	PCI/SA	0.646	1.0E+0	3.176E-2
31758	**9H571110**			**J6E25037912**	P-0624	FILTER	5/25/2006 10:00:00	5/10/2006 11:20:00 AM				
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**5.3238E+00**	2.048E+00	2.122E+00	6.394E+00	PCI/SA	1.0	1.0E+0	2.113E-2
BETA	BDS8		0	6/20/2006 4:02:16 PM	**3.3468E+01**	2.452E+00	3.66E+00	6.231E+00	PCI/SA	1.0	1.0E+0	3.344E-2
RA-226	BXTE		0	6/24/2006 2:03:00 PM	**8.364E-01**	2.672E-01	2.798E-01	7.382E-01	PCI/SA	0.803	1.0E+0	2.5E-1
RA-228	BXTF		0	6/27/2006 6:51:14 AM	**2.9435E+00**	6.43E-01	6.788E-01	2.177E+00	PCI/SA	0.728	1.0E+0	2.5E-1
TH-228	9NS1		0	6/28/2006 3:43:59 AM	**6.6884E-02**	6.688E-02	6.718E-02	1.813E-01	PCI/SA	0.646	1.0E+0	3.431E-2
TH-230	9NS1		0	6/28/2006 3:43:59 AM	**1.9005E-01**	1.097E-01	1.112E-01	1.717E-01	PCI/SA	0.646	1.0E+0	3.431E-2
TH-232	9NS1		0	6/28/2006 3:43:59 AM	**-3.1674E-02**	3.167E-02	3.182E-02	3.8E-01	PCI/SA	0.646	1.0E+0	3.431E-2
U-234	7YSR		0	6/29/2006 12:36:44	**7.963E-02**	1.015E-01	1.017E-01	4.767E-01	PCI/SA	0.98	1.0E+0	3.285E-2
U-235	7YSR		0	6/29/2006 12:36:44	**0.0E+00**	0.0E+00	1.219E-01	2.697E-01	PCI/SA	0.98	1.0E+0	3.285E-2
U-238	7YSR		0	6/29/2006 12:36:44	**9.9536E-02**	9.954E-02	9.986E-02	2.697E-01	PCI/SA	0.98	1.0E+0	3.285E-2
31758	**9H571210**			**J6E25037913**	P-0625	FILTER	5/25/2006 10:00:00	5/10/2006 12:00:00 PM				
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**6.673E+00**	2.279E+00	2.383E+00	6.679E+00	PCI/SA	1.0	1.0E+0	2.095E-2
BETA	BDS8		0	6/20/2006 4:02:16 PM	**3.475E+01**	2.592E+00	3.884E+00	6.718E+00	PCI/SA	1.0	1.0E+0	3.336E-2
RA-226	BXTE		0	6/24/2006 2:04:00 PM	**1.0922E-01**	2.375E-01	2.378E-01	8.892E-01	PCI/SA	0.776	1.0E+0	2.51E-1
RA-228	BXTF		0	6/27/2006 6:51:14 AM	**5.5446E+00**	8.4E-01	9.309E-01	2.413E+00	PCI/SA	0.67	1.0E+0	2.51E-1
TH-228	9NS1		0	6/28/2006 3:43:59 AM	**4.4828E-02**	4.483E-02	4.501E-02	1.215E-01	PCI/SA	0.812	1.0E+0	3.351E-2
TH-230	9NS1		0	6/28/2006 3:43:59 AM	**3.3968E-01**	1.201E-01	1.239E-01	1.151E-01	PCI/SA	0.812	1.0E+0	3.351E-2
TH-232	9NS1		0	6/28/2006 3:43:59 AM	**4.2461E-02**	4.246E-02	4.263E-02	1.151E-01	PCI/SA	0.812	1.0E+0	3.351E-2
U-234	7YSR		0	6/29/2006 12:37:06	**7.435E-02**	1.107E-01	1.109E-01	5.84E-01	PCI/SA	0.88	1.0E+0	3.255E-2
U-235	7YSR		0	6/29/2006 12:37:06	**-1.7498E-02**	1.237E-02	1.245E-02	4.997E-01	PCI/SA	0.88	1.0E+0	3.255E-2
U-238	7YSR		0	6/29/2006 12:37:06	**4.8103E-02**	1.118E-01	1.118E-01	6.769E-01	PCI/SA	0.88	1.0E+0	3.255E-2
31758	**9H571310**			**J6E25037914**	P-0626	FILTER	5/25/2006 10:00:00	5/10/2006 12:15:00 PM				
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**5.2958E+00**	1.995E+00	2.067E+00	6.113E+00	PCI/SA	1.0	1.0E+0	2.096E-2
BETA	BDS8		0	6/20/2006 4:05:03 PM	**2.5918E+01**	2.289E+00	2.94E+00	6.465E+00	PCI/SA	1.0	1.0E+0	3.415E-2
RA-226	BXTE		0	6/24/2006 2:02:03 PM	**1.5696E-02**	1.185E-01	1.185E-01	4.848E-01	PCI/SA	0.96	1.0E+0	2.499E-1
RA-228	BXTF		0	6/27/2006 6:51:14 AM	**4.1782E+00**	6.357E-01	7.052E-01	1.786E+00	PCI/SA	0.862	1.0E+0	2.499E-1
TH-228	9NS1		0	6/28/2006 12:43:21 PM	**2.8898E-01**	1.4E-01	1.424E-01	4.444E-01	PCI/SA	0.945	1.0E+0	3.399E-2
TH-230	9NS1		0	6/28/2006 12:43:21 PM	**3.3224E-01**	1.189E-01	1.225E-01	2.344E-01	PCI/SA	0.945	1.0E+0	3.399E-2
TH-232	9NS1		0	6/28/2006 12:43:21 PM	**-1.9543E-02**	1.954E-02	1.962E-02	2.344E-01	PCI/SA	0.945	1.0E+0	3.399E-2

6146436, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 49 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H6AW11AA=> , mat:FILTER | Air *wo:H6AW11AA=> , mat:FILTER | Air *wo:H6AW11AA=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
U-234	7YSR	0		6/29/2006 12:37:18	**-4.7527E-02**	2.125E-02	2.161E-02	6.713E-01	PCI/SA	0.87	1.0E+0	3.266E-2
U-235	7YSR	0		6/29/2006 12:37:18	**-1.9011E-02**	1.344E-02	1.353E-02	5.429E-01	PCI/SA	0.87	1.0E+0	3.266E-2
U-238	7YSR	0		6/29/2006 12:37:18	**-3.8022E-02**	1.901E-02	1.927E-02	6.344E-01	PCI/SA	0.87	1.0E+0	3.266E-2
31758	**9H571410**			**J6E25037915**	P-0627	FILTER	5/25/2006 10:00:00	5/10/2006 10:15:00 AM				
ALPHA	BAS7	0		6/21/2006 1:23:40 PM	**2.5759E+00**	1.532E+00	1.554E+00	5.551E+00	PCI/SA	1.0	1.0E+0	2.096E-2
BETA	BDS8	0		6/20/2006 4:05:03 PM	**2.64E+01**	2.228E+00	3.165E+00	5.976E+00	PCI/SA	1.0	1.0E+0	3.324E-2
RA-226	BXTE	0		6/24/2006 2:44:00 PM	**2.3057E-01**	1.641E-01	1.66E-01	5.665E-01	PCI/SA	0.9	1.0E+0	2.501E-1
RA-228	BXTF	0		6/27/2006 6:51:23 AM	**6.9961E+00**	8.188E-01	9.699E-01	2.208E+00	PCI/SA	0.826	1.0E+0	2.501E-1
TH-228	9NS1	0		6/28/2006 12:43:21 PM	**1.6199E-06**	8.409E-02	8.409E-02	4.508E-01	PCI/SA	0.778	1.0E+0	3.423E-2
TH-230	9NS1	0		6/28/2006 12:43:21 PM	**1.1491E-01**	8.286E-02	8.352E-02	2.757E-01	PCI/SA	0.778	1.0E+0	3.423E-2
TH-232	9NS1	0		6/28/2006 12:43:21 PM	**0.0E+00**	0.0E+00	5.629E-02	1.246E-01	PCI/SA	0.778	1.0E+0	3.423E-2
U-234	7YSR	0		6/29/2006 12:37:37	**-1.9313E-02**	1.366E-02	1.375E-02	5.516E-01	PCI/SA	0.859	1.0E+0	3.237E-2
U-235	7YSR	0		6/29/2006 12:37:37	**-1.9313E-02**	1.366E-02	1.375E-02	5.516E-01	PCI/SA	0.859	1.0E+0	3.237E-2
U-238	7YSR	0		6/29/2006 12:37:37	**0.0E+00**	0.0E+00	1.478E-01	3.271E-01	PCI/SA	0.859	1.0E+0	3.237E-2
31758	**9H571F10**			**J6E2503792**	000451	FILTER	5/25/2006 10:00:00	5/10/2006 10:35:00 AM				
ALPHA	BAS7	0		6/21/2006 9:37:56 AM	**7.5196E+00**	2.329E+00	2.457E+00	6.451E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8	0		6/20/2006 2:03:16 PM	**3.3469E+01**	2.585E+00	3.53E+00	7.012E+00	PCI/SA	1.0	1.0E+0	3.334E-2
RA-226	BXTE	0		6/24/2006 1:24:02 PM	**5.6233E-02**	1.553E-01	1.554E-01	6.207E-01	PCI/SA	0.841	1.0E+0	2.49E-1
RA-228	BXTF	0		6/27/2006 6:50:22 AM	**2.162E+00**	7.172E-01	7.455E-01	2.967E+00	PCI/SA	0.758	1.0E+0	2.49E-1
TH-228	9NS1	0		6/28/2006 1:29:18 AM	**-3.9052E-02**	1.033E-01	1.034E-01	6.565E-01	PCI/SA	0.575	1.0E+0	3.3E-2
TH-230	9NS1	0		6/28/2006 1:29:18 AM	**2.2196E-01**	1.281E-01	1.3E-01	2.005E-01	PCI/SA	0.575	1.0E+0	3.3E-2
TH-232	9NS1	0		6/28/2006 1:29:18 AM	**1.4797E-01**	1.046E-01	1.056E-01	2.005E-01	PCI/SA	0.575	1.0E+0	3.3E-2
U-234	7YSR	0		6/29/2006 12:34:43	**9.9766E-02**	9.977E-02	1.001E-01	2.704E-01	PCI/SA	1.018	1.0E+0	3.232E-2
U-235	7YSR	0		6/29/2006 12:34:43	**7.9806E-02**	1.017E-01	1.019E-01	4.779E-01	PCI/SA	1.018	1.0E+0	3.232E-2
U-238	7YSR	0		6/29/2006 12:34:43	**-3.325E-05**	1.093E-01	1.093E-01	7.344E-01	PCI/SA	1.018	1.0E+0	3.232E-2
31758	**9H571G10**			**J6E2503793**	000452	FILTER	5/25/2006 10:00:00	5/10/2006 10:50:00 AM				
ALPHA	BAS7	0		6/21/2006 9:37:56 AM	**8.3814E+00**	2.486E+00	2.635E+00	6.711E+00	PCI/SA	1.0	1.0E+0	2.077E-2
BETA	BDS8	0		6/20/2006 4:02:18 PM	**3.6893E+01**	2.583E+00	3.739E+00	6.749E+00	PCI/SA	1.0	1.0E+0	3.321E-2
RA-226	BXTE	0		6/24/2006 1:25:00 PM	**-3.8645E-01**	2.412E-01	2.443E-01	1.027E+00	PCI/SA	0.817	1.0E+0	2.509E-1
RA-228	BXTF	0		6/27/2006 6:50:22 AM	**9.5052E-01**	7.221E-01	7.62E-01	3.395E+00	PCI/SA	0.734	1.0E+0	2.509E-1
TH-228	9NS1	0		6/28/2006 1:29:29 AM	**2.2843E-01**	9.679E-02	9.889E-02	1.886E-01	PCI/SA	0.865	1.0E+0	3.313E-2
TH-230	9NS1	0		6/28/2006 1:29:29 AM	**1.8653E-01**	8.342E-02	8.505E-02	1.011E-01	PCI/SA	0.865	1.0E+0	3.313E-2
TH-232	9NS1	0		6/28/2006 1:29:29 AM	**0.0E+00**	0.0E+00	4.569E-02	1.011E-01	PCI/SA	0.865	1.0E+0	3.313E-2
U-234	7YSR	0		6/29/2006 12:34:51	**2.1996E-02**	1.185E-01	1.185E-01	7.557E-01	PCI/SA	0.871	1.0E+0	3.244E-2
U-235	7YSR	0		6/29/2006 12:34:51	**1.7602E-01**	1.587E-01	1.593E-01	6.217E-01	PCI/SA	0.871	1.0E+0	3.244E-2
U-238	7YSR	0		6/29/2006 12:34:51	**-8.8019E-02**	4.401E-02	4.459E-02	7.557E-01	PCI/SA	0.871	1.0E+0	3.244E-2
31758	**9H571M10**			**J6E2503794**	000453	FILTER	5/25/2006 10:00:00	5/10/2006 11:25:00 AM				
ALPHA	BAS7	0		6/21/2006 9:37:56 AM	**1.0018E+01**	2.543E+00	2.744E+00	6.144E+00	PCI/SA	1.0	1.0E+0	2.088E-2
BETA	BDS8	0		6/20/2006 4:02:18 PM	**4.4018E+01**	2.765E+00	4.159E+00	6.617E+00	PCI/SA	1.0	1.0E+0	3.324E-2
RA-226	BXTE	0		6/24/2006 1:26:00 PM	**1.6183E-01**	1.52E-01	1.53E-01	5.496E-01	PCI/SA	0.919	1.0E+0	2.511E-1
RA-228	BXTF	0		6/27/2006 6:50:33 AM	**7.1328E-01**	4.923E-01	5.638E-01	2.473E+00	PCI/SA	0.839	1.0E+0	2.511E-1
TH-228	9NS1	0		6/28/2006 1:29:40 AM	**6.2618E-02**	9.901E-02	9.918E-02	4.609E-01	PCI/SA	0.72	1.0E+0	3.38E-2
TH-230	9NS1	0		6/28/2006 1:29:40 AM	**1.7794E-01**	1.027E-01	1.041E-01	1.607E-01	PCI/SA	0.72	1.0E+0	3.38E-2
TH-232	9NS1	0		6/28/2006 1:29:40 AM	**1.1863E-01**	8.388E-02	8.462E-02	1.607E-01	PCI/SA	0.72	1.0E+0	3.38E-2
U-234	7YSR	0		6/29/2006 12:35:04	**2.2386E-01**	1.809E-01	1.818E-01	6.99E-01	PCI/SA	0.931	1.0E+0	3.262E-2
U-235	7YSR	0		6/29/2006 12:35:04	**-4.0701E-02**	2.878E-02	2.897E-02	5.75E-01	PCI/SA	0.931	1.0E+0	3.262E-2
U-238	7YSR	0		6/29/2006 12:35:04	**1.0176E-01**	1.509E-01	1.511E-01	7.489E-01	PCI/SA	0.931	1.0E+0	3.262E-2
31758	**9H571N10**			**J6E2503795**	000454	FILTER	5/25/2006 10:00:00	5/10/2006 12:05:00 PM				
ALPHA	BAS7	0		6/21/2006 9:37:56 AM	**7.6052E+00**	2.27E+00	2.401E+00	5.544E+00	PCI/SA	1.0	1.0E+0	2.088E-2
BETA	BDS8	0		6/20/2006 4:02:18 PM	**3.0106E+01**	2.462E+00	3.228E+00	6.611E+00	PCI/SA	1.0	1.0E+0	3.355E-2
RA-226	BXTE	0		6/24/2006 1:24:00 PM	**2.1868E-01**	1.766E-01	1.782E-01	6.226E-01	PCI/SA	0.862	1.0E+0	2.524E-1
RA-228	BXTF	0		6/27/2006 6:50:33 AM	**2.6251E+00**	6.435E-01	6.849E-01	2.471E+00	PCI/SA	0.787	1.0E+0	2.524E-1
TH-228	9NS1	0		6/28/2006 1:29:52 AM	**6.2136E-02**	1.243E-01	1.244E-01	5.77E-01	PCI/SA	0.763	1.0E+0	3.33E-2
TH-230	9NS1	0		6/28/2006 1:29:52 AM	**3.8257E-01**	1.585E-01	1.625E-01	3.53E-01	PCI/SA	0.763	1.0E+0	3.33E-2

6146436, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 49 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H6AW11AA=> , mat:FILTER | Air *wo:H6AW11AA=> , mat:FILTER | Air *wo:H6AW11AA=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
TH-232	9NS1		0	6/28/2006 1:29:52 AM	**5.8857E-02**	5.886E-02	5.912E-02	1.595E-01	PCI/SA	0.763	1.0E+0	3.33E-2
U-234	7YSR		0	6/29/2006 12:35:14	**1.8871E-01**	1.979E-01	1.984E-01	8.759E-01	PCI/SA	0.971	1.0E+0	3.272E-2
U-235	7YSR		0	6/29/2006 12:35:14	**2.6413E-01**	1.645E-01	1.658E-01	4.518E-01	PCI/SA	0.971	1.0E+0	3.272E-2
U-238	7YSR		0	6/29/2006 12:35:14	**2.0754E-01**	1.677E-01	1.685E-01	6.479E-01	PCI/SA	0.971	1.0E+0	3.272E-2
31758	**9H571Q10**			**J6E2503796**	000455	FILTER	5/25/2006 10:00:00	5/10/2006 12:20:00 PM				
ALPHA	BAS7		0	6/21/2006 11:30:00	**5.888E+00**	2.404E+00	2.481E+00	8.28E+00	PCI/SA	1.0	1.0E+0	2.091E-2
BETA	BDS8		0	6/20/2006 4:02:18 PM	**3.9594E+01**	2.647E+00	3.775E+00	6.341E+00	PCI/SA	1.0	1.0E+0	3.357E-2
RA-226	BXTE		0	6/24/2006 1:26:00 PM	**-9.0912E-02**	2.105E-01	2.108E-01	8.933E-01	PCI/SA	0.91	1.0E+0	2.503E-1
RA-228	BXTF		0	6/27/2006 6:50:33 AM	**1.8827E+00**	6.448E-01	6.583E-01	2.619E+00	PCI/SA	0.818	1.0E+0	2.503E-1
TH-228	9NS1		0	6/28/2006 3:43:59 AM	**9.7225E-02**	1.255E-01	1.259E-01	5.448E-01	PCI/SA	0.604	1.0E+0	3.366E-2
TH-230	9NS1		0	6/28/2006 3:43:59 AM	**1.8418E-01**	1.063E-01	1.078E-01	1.664E-01	PCI/SA	0.604	1.0E+0	3.366E-2
TH-232	9NS1		0	6/28/2006 3:43:59 AM	**-3.0696E-02**	3.07E-02	3.083E-02	3.682E-01	PCI/SA	0.604	1.0E+0	3.366E-2
U-234	7YSR		0	6/29/2006 12:35:31	**0.0E+00**	0.0E+00	1.225E-01	2.71E-01	PCI/SA	0.961	1.0E+0	3.232E-2
U-235	7YSR		0	6/29/2006 12:35:31	**5.9966E-02**	1.039E-01	1.04E-01	5.651E-01	PCI/SA	0.961	1.0E+0	3.232E-2
U-238	7YSR		0	6/29/2006 12:35:31	**-2.0011E-02**	2.001E-02	2.008E-02	4.79E-01	PCI/SA	0.961	1.0E+0	3.232E-2
31758	**9H571R10**			**J6E2503797**	000456	FILTER	5/25/2006 10:00:00	5/10/2006 12:25:00 PM				
ALPHA	BAS7		0	6/21/2006 11:30:00	**-5.3806E-01**	1.049E+00	1.05E+00	6.462E+00	PCI/SA	1.0	1.0E+0	2.082E-2
BETA	BDS8		0	6/20/2006 4:02:22 PM	**1.8366E+00**	1.466E+00	1.472E+00	6.221E+00	PCI/SA	1.0	1.0E+0	3.334E-2
RA-226	BXTE		0	6/24/2006 1:25:00 PM	**2.9856E-01**	2.182E-01	2.203E-01	7.57E-01	PCI/SA	1.008	1.0E+0	2.487E-1
RA-228	BXTF		0	6/27/2006 6:51:02 AM	**8.3436E-01**	4.436E-01	4.612E-01	1.968E+00	PCI/SA	0.879	1.0E+0	2.487E-1
TH-228	9NS1		0	6/28/2006 3:43:59 AM	**1.6945E-06**	8.796E-02	8.796E-02	4.716E-01	PCI/SA	0.755	1.0E+0	3.291E-2
TH-230	9NS1		0	6/28/2006 3:43:59 AM	**1.2025E-01**	8.672E-02	8.741E-02	2.885E-01	PCI/SA	0.755	1.0E+0	3.291E-2
TH-232	9NS1		0	6/28/2006 3:43:59 AM	**0.0E+00**	0.0E+00	5.891E-02	1.304E-01	PCI/SA	0.755	1.0E+0	3.291E-2
U-234	7YSR		0	6/29/2006 12:35:41	**2.1873E-01**	1.547E-01	1.557E-01	2.964E-01	PCI/SA	0.914	1.0E+0	3.201E-2
U-235	7YSR		0	6/29/2006 12:35:41	**0.0E+00**	0.0E+00	1.339E-01	2.964E-01	PCI/SA	0.914	1.0E+0	3.201E-2
U-238	7YSR		0	6/29/2006 12:35:41	**8.7481E-02**	1.115E-01	1.118E-01	5.239E-01	PCI/SA	0.914	1.0E+0	3.201E-2
31758	**9H571T10**			**J6E2503798**	000457	FILTER	5/25/2006 10:00:00	5/10/2006 12:10:00 PM				
ALPHA	BAS7		0	6/21/2006 11:30:00	**0.0E+00**	0.0E+00	1.22E+00	6.687E+00	PCI/SA	1.0	1.0E+0	2.083E-2
BETA	BDS8		0	6/20/2006 4:02:22 PM	**1.6761E+00**	1.28E+00	1.292E+00	5.419E+00	PCI/SA	1.0	1.0E+0	3.393E-2
RA-226	BXTE		0	6/24/2006 2:04:01 PM	**3.0013E-01**	1.81E-01	1.835E-01	6.023E-01	PCI/SA	0.989	1.0E+0	2.521E-1
RA-228	BXTF		0	6/27/2006 6:51:02 AM	**2.3461E+00**	5.319E-01	5.676E-01	1.821E+00	PCI/SA	0.857	1.0E+0	2.521E-1
TH-228	9NS1		0	6/28/2006 3:43:59 AM	**5.0791E-02**	1.136E-01	1.137E-01	6.093E-01	PCI/SA	0.437	1.0E+0	3.453E-2
TH-230	9NS1		0	6/28/2006 3:43:59 AM	**3.3675E-01**	1.984E-01	2.014E-01	5.771E-01	PCI/SA	0.437	1.0E+0	3.453E-2
TH-232	9NS1		0	6/28/2006 3:43:59 AM	**4.8108E-02**	1.076E-01	1.077E-01	5.771E-01	PCI/SA	0.437	1.0E+0	3.453E-2
U-234	7YSR		0	6/29/2006 12:35:57	**3.7687E-02**	9.98E-02	9.985E-02	5.953E-01	PCI/SA	0.976	1.0E+0	3.262E-2
U-235	7YSR		0	6/29/2006 12:35:57	**-1.887E-02**	1.887E-02	1.893E-02	4.517E-01	PCI/SA	0.976	1.0E+0	3.262E-2
U-238	7YSR		0	6/29/2006 12:35:57	**0.0E+00**	0.0E+00	1.155E-01	2.555E-01	PCI/SA	0.976	1.0E+0	3.262E-2
31758	**9H571V10**			**J6E2503799**	P-0621	FILTER	5/25/2006 10:00:00	5/10/2006 10:10:00 AM				
ALPHA	BAS7		0	6/21/2006 11:30:00	**4.2238E+00**	1.84E+00	1.89E+00	6.065E+00	PCI/SA	1.0	1.0E+0	2.113E-2
BETA	BDS8		0	6/20/2006 4:02:22 PM	**2.8114E+01**	2.298E+00	2.998E+00	6.19E+00	PCI/SA	1.0	1.0E+0	3.331E-2
RA-226	BXTE		0	6/24/2006 2:02:00 PM	**1.716E-01**	2.16E-01	2.168E-01	7.836E-01	PCI/SA	0.962	1.0E+0	2.526E-1
RA-228	BXTF		0	6/27/2006 6:51:02 AM	**2.0975E+00**	5.256E-01	5.522E-01	1.86E+00	PCI/SA	0.875	1.0E+0	2.526E-1
TH-228	9NS1		0	6/28/2006 3:43:59 AM	**8.1352E-02**	8.135E-02	8.17E-02	3.253E-01	PCI/SA	0.85	1.0E+0	3.326E-2
TH-230	9NS1		0	6/28/2006 3:43:59 AM	**2.5683E-01**	1.149E-01	1.173E-01	1.392E-01	PCI/SA	0.85	1.0E+0	3.326E-2
TH-232	9NS1		0	6/28/2006 3:43:59 AM	**-2.5683E-02**	2.568E-02	2.579E-02	3.081E-01	PCI/SA	0.85	1.0E+0	3.326E-2
U-234	7YSR		0	6/29/2006 12:36:07	**1.8889E-01**	1.499E-01	1.507E-01	5.027E-01	PCI/SA	0.937	1.0E+0	3.242E-2
U-235	7YSR		0	6/29/2006 12:36:07	**0.0E+00**	0.0E+00	1.285E-01	2.844E-01	PCI/SA	0.937	1.0E+0	3.242E-2
U-238	7YSR		0	6/29/2006 12:36:07	**1.0495E-01**	1.049E-01	1.053E-01	2.844E-01	PCI/SA	0.937	1.0E+0	3.242E-2
31758	**9H571X10**			**J6E25037910**	P-0622	FILTER	5/25/2006 10:00:00	5/10/2006 10:30:00 AM				
ALPHA	BAS7		0	6/21/2006 11:30:00	**6.6226E+00**	2.172E+00	2.277E+00	5.66E+00	PCI/SA	1.0	1.0E+0	2.046E-2
BETA	BDS8		0	6/20/2006 4:02:22 PM	**2.6877E+01**	2.285E+00	2.952E+00	6.192E+00	PCI/SA	1.0	1.0E+0	3.167E-2
RA-226	BXTE		0	6/24/2006 2:04:01 PM	**3.3431E-02**	1.685E-01	1.685E-01	6.735E-01	PCI/SA	0.868	1.0E+0	2.451E-1
RA-228	BXTF		0	6/27/2006 6:51:02 AM	**6.8745E-01**	4.566E-01	4.762E-01	2.112E+00	PCI/SA	0.787	1.0E+0	2.451E-1
TH-228	9NS1		0	6/28/2006 3:43:59 AM	**1.0331E-06**	7.584E-02	7.584E-02	4.557E-01	PCI/SA	0.633	1.0E+0	3.278E-2

6146436, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 49 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H6AW11AA=> , mat:FILTER | Air *wo:H6AW11AA=> , mat:FILTER | Air *wo:H6AW11AA=> , mat:FILTER | Air.

SDG or Batch Isotope	Rpt Db Id Method	RTst	Qc	LotSample Analysis Date	Client Id Result	Matrix Cnt Uncert	Tot Uncert	Received Date Mda	Sample Date Units	Expected	Yield	Volumes	
TH-230	9NS1	0		6/28/2006 3:43:59 AM	**2.3459E-01**	1.375E-01	1.393E-01	4.316E-01	PCI/SA		0.633	1.0E+0	3.278E-2
TH-232	9NS1	0		6/28/2006 3:43:59 AM	**5.8647E-02**	5.865E-02	5.891E-02	1.589E-01	PCI/SA		0.633	1.0E+0	3.278E-2
U-234	7YSR	0		6/29/2006 12:36:18	**1.5973E-01**	1.44E-01	1.446E-01	5.642E-01	PCI/SA		1.002	1.0E+0	3.11E-2
U-235	7YSR	0		6/29/2006 12:36:18	**7.9867E-02**	1.018E-01	1.02E-01	4.782E-01	PCI/SA		1.002	1.0E+0	3.11E-2
U-238	7YSR	0		6/29/2006 12:36:18	**-3.9933E-02**	2.824E-02	2.842E-02	5.642E-01	PCI/SA		1.002	1.0E+0	3.11E-2
31758	**H6AW11AB**			**J6E260000436**	INTRA-LAB BLANK	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM					
TH-228	9NS1	0	B	6/28/2006 12:43:21 PM	**6.652E-03**	6.652E-03	6.678E-03	2.66E-02	PCI/SA		0.847	1.0E+0	1.0E+0
TH-230	9NS1	0	B	6/28/2006 12:43:21 PM	**2.3092E-02**	1.05E-02	1.07E-02	2.518E-02	PCI/SA		0.847	1.0E+0	1.0E+0
TH-232	9NS1	0	B	6/28/2006 12:43:21 PM	**-2.0992E-03**	2.099E-03	2.108E-03	2.518E-02	PCI/SA		0.847	1.0E+0	1.0E+0
31758	**H6AW11CS**			**J6E260000436**	INTRA-LAB CHECK	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM					
TH-230	9NS1	0	S	6/28/2006 12:43:21 PM	**1.871E+00**	9.489E-02	1.953E-01	2.881E-02	PCI/SA	1.814E+00	0.757	1.0E+0	1.0E+0

6146436, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 49 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H6AW11AA=> , mat:FILTER | Air *wo:H6AW11AA=> , mat:FILTER | Air *wo:H6AW11AA=> , mat:FILTER | Air.

Batch Nbr: 6146436

Alpha Spec, Thlso by ALP , Results Summary Report

6/28/2006 9:20:04 PM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Thlso by ALP				Richland Standard Alplso Wo Blk Subt.										
Calc	S1	FILTER	H57091AA	TH-228	3.06E-01	(1.72E-01)		PCI/SA	R	2.05E-01	5.61E-01	CRDL met	62%	
Calc	S1	FILTER	H57091AA	TH-230	2.64E-01	(1.37E-01)		PCI/SA	R	1.23E-01	3.88E-01		62%	
Calc	S1	FILTER	H57091AA	TH-232	1.06E-01	(7.53E-02)	U4	PCI/SA	R		1.43E-01		62%	
Calc	S1	FILTER	H571F1AA	TH-228	-3.91E-02	(1.03E-01)	U4	PCI/SA	R	2.23E-01	6.57E-01		57%	
Calc	S1	FILTER	H571F1AA	TH-230	2.22E-01	(1.30E-01)		PCI/SA	R		2.01E-01		57%	
Calc	S1	FILTER	H571F1AA	TH-232	1.48E-01	(1.06E-01)	U4	PCI/SA	R		2.01E-01		57%	
Calc	S1	FILTER	H571G1AA	TH-228	2.28E-01	(9.89E-02)		PCI/SA	R	4.10E-02	1.89E-01		86%	
Calc	S1	FILTER	H571G1AA	TH-230	1.87E-01	(8.50E-02)		PCI/SA	R		1.01E-01		86%	
Calc	S1	FILTER	H571G1AA	TH-232	0.00E+00	(4.57E-02)	U4	PCI/SA	R		1.01E-01		86%	
Calc	S1	FILTER	H571M1AA	TH-228	6.26E-02	(9.92E-02)	U4	PCI/SA	R	1.46E-01	4.61E-01		72%	
Calc	S1	FILTER	H571M1AA	TH-230	1.78E-01	(1.04E-01)		PCI/SA	R		1.61E-01		72%	
Calc	S1	FILTER	H571M1AA	TH-232	1.19E-01	(8.46E-02)	U4	PCI/SA	R		1.61E-01		72%	
Calc	S1	FILTER	H571N1AA	TH-228	6.21E-02	(1.24E-01)	U4	PCI/SA	R	2.04E-01	5.77E-01		76%	
Calc	S1	FILTER	H571N1AA	TH-230	3.83E-01	(1.63E-01)		PCI/SA	R	9.68E-02	3.53E-01		76%	
Calc	S1	FILTER	H571N1AA	TH-232	5.89E-02	(5.91E-02)	U4	PCI/SA	R		1.60E-01		76%	
Calc	S1	FILTER	H571Q1AA	TH-228	9.72E-02	(1.26E-01)	U4	PCI/SA	R	1.85E-01	5.45E-01		60%	
Calc	S1	FILTER	H571Q1AA	TH-230	1.84E-01	(1.08E-01)		PCI/SA	R		1.66E-01		60%	
Calc	S1	FILTER	H571Q1AA	TH-232	-3.07E-02	(3.08E-02)	U4	PCI/SA	R	1.01E-01	3.68E-01		60%	
Calc	S1	FILTER	H571R1AA	TH-228	1.69E-06	(8.80E-02)	U4	PCI/SA	R	1.67E-01	4.72E-01		76%	
Calc	S1	FILTER	H571R1AA	TH-230	1.20E-01	(8.74E-02)	U4	PCI/SA	R	7.91E-02	2.89E-01		76%	
Calc	S1	FILTER	H571R1AA	TH-232	0.00E+00	(5.89E-02)	U4	PCI/SA	R		1.30E-01		76%	
Calc	S1	FILTER	H571T1AA	TH-228	5.08E-02	(1.14E-01)	U4	PCI/SA	R	1.67E-01	6.09E-01		44%	
Calc	S1	FILTER	H571T1AA	TH-230	3.37E-01	(2.01E-01)		PCI/SA	R	1.58E-01	5.77E-01		44%	
Calc	S1	FILTER	H571T1AA	TH-232	4.81E-02	(1.08E-01)	U4	PCI/SA	R	1.58E-01	5.77E-01		44%	
Calc	S1	FILTER	H571V1AA	TH-228	8.14E-02	(8.17E-02)	U4	PCI/SA	R	8.92E-02	3.25E-01		85%	
Calc	S1	FILTER	H571V1AA	TH-230	2.57E-01	(1.17E-01)		PCI/SA	R		1.39E-01		85%	
Calc	S1	FILTER	H571V1AA	TH-232	-2.57E-02	(2.58E-02)	U4	PCI/SA	R	8.45E-02	3.08E-01		85%	
Calc	S1	FILTER	H571X1AA	TH-228	1.03E-06	(7.58E-02)	U4	PCI/SA	R	1.44E-01	4.56E-01		63%	
Calc	S1	FILTER	H571X1AA	TH-230	2.35E-01	(1.39E-01)		PCI/SA	R	1.36E-01	4.32E-01		63%	
Calc	S1	FILTER	H571X1AA	TH-232	5.86E-02	(5.89E-02)	U4	PCI/SA	R		1.59E-01		63%	
Calc	S1	FILTER	H57101AA	TH-228	1.31E+00	(3.06E-01)		PCI/SA	R	1.32E-01	4.18E-01		70%	
Calc	S1	FILTER	H57101AA	TH-230	1.64E+00	(3.37E-01)		PCI/SA	R	8.85E-02	3.23E-01		70%	
Calc	S1	FILTER	H57101AA	TH-232	9.96E-01	(2.54E-01)		PCI/SA	R	8.85E-02	3.23E-01		70%	
Calc	S1	FILTER	H57111AA	TH-228	6.69E-02	(6.72E-02)	U4	PCI/SA	R		1.81E-01		65%	
Calc	S1	FILTER	H57111AA	TH-230	1.90E-01	(1.11E-01)		PCI/SA	R		1.72E-01		65%	
Calc	S1	FILTER	H57111AA	TH-232	-3.17E-02	(3.18E-02)	U4	PCI/SA	R	1.04E-01	3.80E-01		65%	
Calc	S1	FILTER	H57121AA	TH-228	4.48E-02	(4.50E-02)	U4	PCI/SA	R		1.21E-01		81%	

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:51
RADCALC v4.8.18
STL Richland

Batch Nbr: 6146436

Alpha Spec, ThIso by ALP , Results

6/28/2006 9:20:05 PM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	S1	FILTER	**H57121AA**	TH-230	**3.40E-01**	**(1.24E-01)**		PCI/SA	R		1.15E-01		81%	
Calc	S1	FILTER	**H57121AA**	TH-232	**4.25E-02**	**(4.26E-02)**	**U4**	PCI/SA	R		1.15E-01		81%	
Calc	S1	FILTER	**H57131AA**	TH-228	**2.89E-01**	**(1.42E-01)**		PCI/SA	R	1.66E-01	4.44E-01		94%	
Calc	S1	FILTER	**H57131AA**	TH-230	**3.32E-01**	**(1.23E-01)**		PCI/SA	R	6.43E-02	2.34E-01		94%	
Calc	S1	FILTER	**H57131AA**	TH-232	**-1.95E-02**	**(1.96E-02)**	**U4**	PCI/SA	R	6.43E-02	2.34E-01		94%	
Calc	S1	FILTER	**H57141AA**	TH-228	**1.62E-06**	**(8.41E-02)**	**U4**	PCI/SA	R	1.60E-01	4.51E-01		78%	
Calc	S1	FILTER	**H57141AA**	TH-230	**1.15E-01**	**(8.35E-02)**	**U4**	PCI/SA	R	7.56E-02	2.76E-01		78%	
Calc	S1	FILTER	**H57141AA**	TH-232	**0.00E+00**	**(5.63E-02)**	**U4**	PCI/SA	R		1.25E-01		78%	
Calc	S1	FILTER	**H6AW11AA**	TH-228	**6.65E-03**	**(6.68E-03)**	**U4**	PCI/SA	R	7.29E-03	2.66E-02	**B**	85%	
Calc	S1	FILTER	**H6AW11AA**	TH-230	**2.31E-02**	**(1.07E-02)**		PCI/SA	R	6.91E-03	2.52E-02	**B**	85%	
Calc	S1	FILTER	**H6AW11AA**	TH-232	**-2.10E-03**	**(2.11E-03)**	**U4**	PCI/SA	R	6.91E-03	2.52E-02	**B**	85%	
Calc	S1	FILTER	**H6AW11AC**	TH-230	**1.87E+00**	**(1.95E-01)**		PCI/SA	R	7.90E-03	2.88E-02	**S**	76%	103%

P Anderson
6-29-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:66
RADCALC v4.8.18
STL Richland

Batch Nbr: 6146436

Alpha Spec, ThIso by ALP , Calculated Results

6/28/2006 9:20:05 PM

Detailed Report

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H57091AA**	**PCI/SA**		05/10/06 10:20	06/28/06 01:29			1	1.00 Sa	
536403,000450					,J6E250379-1 v4.8.18		FILTER					THTF0608 Alq		0.083864 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 21:19	TH-228	8	5	ALP114	ED	N	N	3.2873E-01		N	62%	N		1.0000E+00	4.5045E-01	1.0494E+00	
			500.0166666	1000			Y		(9.862E-03)			4%			(0.000E+00)	11.924007		
1	06/27/06 21:19	TH-229	415	0	ALP114	ED	Y	N	3.2873E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000			Y		(9.862E-03)						(0.000E+00)	11.924007		
2	06/27/06 21:19	TH-230	6	2	ALP114	ED	N	N	3.2873E-01		N	62%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000			Y		(9.862E-03)			4%			(0.000E+00)	11.924007		
3	06/27/06 21:19	TH-232	2	0	ALP114	ED	N	N	3.2873E-01		N	62%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000			Y		(9.862E-03)			4%			(0.000E+00)	11.924007		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**0.306475**		1.09995E-02	0.054373	0.054373	1.00 Sa	62%		0.560714		
				(0.171844)		(6.0826E-03)	(0.030327)	(0.030327)	(0.028284)			0.204973		
	06/28/06	TH-229	R	**13.560998**		8.29972E-01	2.524776	2.524776	1.00 Sa	62%				
				(1.102505)		(4.0742E-02)	(0.145249)	(0.145249)	(0.028284)					
	06/28/06	TH-230	R	**0.263906**		9.99960E-03	0.049134	0.049134	1.00 Sa	62%		0.388476		
				(0.136774)		(5.0989E-03)	(0.025308)	(0.025308)	(0.028284)			0.122792		
	06/28/06	TH-232	R	**0.105563**	**U4**	3.99987E-03	0.019654	0.019654	1.00 Sa	62%		0.143038		
				(0.075283)		(2.8283E-03)	(0.013971)	(0.013971)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H571F1AA**	**PCI/SA**		05/10/06 10:35	06/28/06 01:29			1	1.00 Sa	
536403,000451					,J6E250379-2 v4.8.18		FILTER					THTF0609 Alq		0.082997 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 21:19	TH-228	1	3	ALP116	ED	N	N	2.5523E-01		N	57%	N		1.0000E+00	4.5045E-01	1.0494E+00	
			500.0333333	1000.0833			Y		(7.657E-03)			4%			(0.000E+00)	12.048687		
1	06/27/06 21:19	TH-229	299	0	ALP116	ED	Y	N	2.5523E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0333333	1000.0833			Y		(7.657E-03)						(0.000E+00)	12.048687		
2	06/27/06 21:19	TH-230	3	0	ALP116	ED	N	N	2.5523E-01		N	57%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0333333	1000.0833			Y		(7.657E-03)			4%			(0.000E+00)	12.048687		
3	06/27/06 21:19	TH-232	2	0	ALP116	ED	N	N	2.5523E-01		N	57%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0333333	1000.0833			Y		(7.657E-03)			4%			(0.000E+00)	12.048687		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:2

RADCALC v4.8.18
STL Richland

Batch Nbr: 6146436 — Alpha Spec, ThIso by ALP , Calculated Results — 6/28/2006 9:20:05 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**-0.039052**	U4	-9.99883E-04	-0.006857	-0.006857	1.00 Sa	57%		0.656506		
				(0.103398)		(2.6456E-03)	(0.01815)	(0.01815)	(0.028284)			0.222548		
	06/28/06	TH-229	R	**12.715193**		5.97960E-01	2.342808	2.342808	1.00 Sa	57%				
				(1.104429)		(3.4581E-02)	(0.152633)	(0.152633)	(0.028284)					
	06/28/06	TH-230	R	**0.221957**		5.99960E-03	0.040896	0.040896	1.00 Sa	57%		0.200501		
				(0.129967)		(3.4639E-03)	(0.023831)	(0.023831)	(0.028284)					
	06/28/06	TH-232	R	**0.147971**	U4	3.99973E-03	0.027264	0.027264	1.00 Sa	57%		0.200501		
				(0.105624)		(2.8282E-03)	(0.019398)	(0.019398)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H571G1AA**	**PCI/SA**		05/10/06 10:50	06/28/06 01:29			1	1.00 Sa	
536403,000452					,J6E250379-3 v4.8.18		FILTER					THTF0610 Alq		0.083126 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 21:19	TH-228	6	1	ALP117	ED	N	N	3.3591E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0494E+00	
			500.0833333	2500.05			Y		(1.008E-02)			5%			(0.000E+00)	12.029982		
1	06/27/06 21:19	TH-229	591	4	ALP117	ED	Y	N	3.3591E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0833333	2500.05			Y		(1.008E-02)						(0.000E+00)	12.029982		
2	06/27/06 21:19	TH-230	5	0	ALP117	ED	N	N	3.3591E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0833333	2500.05			Y		(1.008E-02)			5%			(0.000E+00)	12.029982		
3	06/27/06 21:19	TH-232	0	0	ALP117	ED	N	N	3.3591E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0833333	2500.05			Y		(1.008E-02)			5%			(0.000E+00)	12.029982		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**0.228427**		1.15980E-02	0.04017	0.04017	1.00 Sa	86%		0.188638		
				(0.098895)		(4.9145E-03)	(0.017237)	(0.017237)	(0.028284)			0.040978		
	06/28/06	TH-229	R	**19.039132**		1.18020E+00	3.513465	3.513465	1.00 Sa	86%				
				(1.462064)		(4.8619E-02)	(0.179052)	(0.179052)	(0.028284)					
	06/28/06	TH-230	R	**0.186528**		9.99833E-03	0.034422	0.034422	1.00 Sa	86%		0.101098		
				(0.085046)		(4.4714E-03)	(0.015569)	(0.015569)	(0.028284)					
	06/28/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	86%		0.101098		
				(0.04569)		(0.0000E+00)	(0.008432)	(0.008432)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H571M1AA**	**PCI/SA**		05/10/06 11:25	06/28/06 01:29			1	1.00 Sa	
536403,000453					,J6E250379-4 v4.8.18		FILTER					THTF0611 Alq		0.0838 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 21:19	TH-228	2	2	ALP119	ED	N	N	2.5157E-01		N	72%	N		1.0000E+00	4.5045E-01	1.0494E+00	
			500.0333333	1000.0833			Y		(7.547E-03)			5%			(0.000E+00)	11.933163		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

RecCnt:4 RADCALC v4.8.18

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

STL Richland

Batch Nbr: 6146436 Alpha Spec, Thiso by ALP , Calculated Results 6/28/2006 9:20:06 PM

1	06/27/06 21:19	TH-229	369	0	ALP119	ED	Y	N	2.5157E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.0333333	1000.0833			Y		(7.547E-03)				(0.000E+00)	11.933163	
2	06/27/06 21:19	TH-230	3	0	ALP119	ED	N	N	2.5157E-01	N	72%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.0333333	1000.0833			Y		(7.547E-03)		5%		(0.000E+00)	11.933163	
3	06/27/06 21:19	TH-232	2	0	ALP119	ED	N	N	2.5157E-01	N	72%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.0333333	1000.0833			Y		(7.547E-03)		5%		(0.000E+00)	11.933163	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**0.062618**	U4	1.99990E-03	0.011101	0.011101	1.00 Sa	72%		0.460856		
				(0.099181)		(3.1621E-03)	(0.017572)	(0.017572)	(0.028284)			0.145669		
	06/28/06	TH-229	R	**15.767641**		7.37951E-01	2.933354	2.933354	1.00 Sa	72%				
				(1.31071)		(3.8416E-02)	(0.176246)	(0.176246)	(0.028284)					
	06/28/06	TH-230	R	**0.17794**		5.99960E-03	0.033103	0.033103	1.00 Sa	72%		0.160739		
				(0.104096)		(3.4639E-03)	(0.019272)	(0.019272)	(0.028284)					
	06/28/06	TH-232	R	**0.118626**	U4	3.99973E-03	0.022069	0.022069	1.00 Sa	72%		0.160739		
				(0.084625)		(2.8282E-03)	(0.015692)	(0.015692)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H571N1AA**	**PCI/SA**		05/10/06 12:05	06/28/06 01:29			1	1.00 Sa	
536403,000454					,J6E250379-5 v4.8.18		FILTER					THTF0612 Alq		0.083297 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 21:19	TH-228	3	4	ALP120	ED	N	N	2.4073E-01		N	76%	N		1.0000E+00	4.5045E-01	1.0493E+00	
			500.0166666	1000.05			Y		(7.222E-03)			5%			(0.000E+00)	12.005281		
1	06/27/06 21:19	TH-229	375	1	ALP120	ED	Y	N	2.4073E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.05			Y		(7.222E-03)						(0.000E+00)	12.005281		
2	06/27/06 21:19	TH-230	7	1	ALP120	ED	N	N	2.4073E-01		N	76%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.05			Y		(7.222E-03)			5%			(0.000E+00)	12.005281		
3	06/27/06 21:19	TH-232	1	0	ALP120	ED	N	N	2.4073E-01		N	76%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.05			Y		(7.222E-03)			5%			(0.000E+00)	12.005281		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**0.062136**	U4	2.00000E-03	0.01095	0.01095	1.00 Sa	76%		0.576974		
				(0.124404)		(3.9999E-03)	(0.021914)	(0.021914)	(0.028284)			0.204417		
	06/28/06	TH-229	R	**16.824911**		7.48975E-01	3.111242	3.111242	1.00 Sa	76%				
				(1.395106)		(3.8741E-02)	(0.18604)	(0.18604)	(0.028284)					
	06/28/06	TH-230	R	**0.382572**		1.29996E-02	0.070745	0.070745	1.00 Sa	76%		0.353027		
				(0.16252)		(5.3850E-03)	(0.029777)	(0.029777)	(0.028284)			0.096819		
	06/28/06	TH-232	R	**0.058857**	U4	1.99993E-03	0.010884	0.010884	1.00 Sa	76%		0.159503		
				(0.059118)		(1.9999E-03)	(0.010914)	(0.010914)	(0.028284)					

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:6 RADCALC v4.8.18
STL Richland

Batch Nbr: 6146436 — Alpha Spec, ThIso by ALP , Calculated Results — 6/28/2006 9:20:06 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H571Q1AA**	**PCI/SA**		05/10/06 12:20	06/28/06 03:43			1	1.00 Sa	
536403,000455					,J6E250379-6 v4.8.18		FILTER					THTF0613 Alq		0.083657 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 23:34	TH-228	3	3	ALP171	ED	N	N	2.9087E-01		N	60%	N		1.0000E+00	4.5045E-01	1.0494E+00	
			499.4666666	998.95			Y		(8.726E-03)			4%			(0.000E+00)	11.95356		
1	06/27/06 23:34	TH-229	364	1	ALP171	ED	Y	N	2.9087E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.726E-03)						(0.000E+00)	11.95356		
2	06/27/06 23:34	TH-230	3	0	ALP171	ED	N	N	2.9087E-01		N	60%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.726E-03)			4%			(0.000E+00)	11.95356		
3	06/27/06 23:34	TH-232	0	1	ALP171	ED	N	N	2.9087E-01		N	60%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.726E-03)			4%			(0.000E+00)	11.95356		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**0.097225**	**U4**	3.00325E-03	0.017206	0.017206	1.00 Sa	60%		0.544776		
				(0.125851)		(3.8771E-03)	(0.02225)	(0.02225)	(0.028284)			0.184673		
	06/28/06	TH-229	R	**13.472484**		7.27776E-01	2.502095	2.502095	1.00 Sa	60%				
				(1.123698)		(3.8211E-02)	(0.151303)	(0.151303)	(0.028284)					
	06/28/06	TH-230	R	**0.184179**		6.00641E-03	0.034205	0.034205	1.00 Sa	60%		0.166375		
				(0.107753)		(3.4678E-03)	(0.019915)	(0.019915)	(0.028284)					
	06/28/06	TH-232	R	**-0.030696**	**U4**	-1.00105E-03	-0.005701	-0.005701	1.00 Sa	60%		0.368236		
				(0.030833)		(1.0011E-03)	(0.005717)	(0.005717)	(0.028284)			0.10099		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H571R1AA**	**PCI/SA**		05/10/06 12:25	06/28/06 03:43			1	1.00 Sa	
536403,000456					,J6E250379-7 v4.8.18		FILTER					THTF0614 Alq		0.082911 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 23:34	TH-228	2	4	ALP172	ED	N	N	2.9949E-01		N	76%	N		1.0000E+00	4.5045E-01	1.0494E+00	
			499.4666666	998.95			Y		(8.985E-03)			5%			(0.000E+00)	12.061067		
1	06/27/06 23:34	TH-229	459	5	ALP172	ED	Y	N	2.9949E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)						(0.000E+00)	12.061067		
2	06/27/06 23:34	TH-230	3	1	ALP172	ED	N	N	2.9949E-01		N	76%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			5%			(0.000E+00)	12.061067		
3	06/27/06 23:34	TH-232	0	0	ALP172	ED	N	N	2.9949E-01		N	76%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			5%			(0.000E+00)	12.061067		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:7 RADCALC v4.8.18 STL Richland

Batch Nbr: 6146436 — Alpha Spec, Thiso by ALP , Calculated Results — 6/28/2006 9:20:06 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**1.6945E-06**	U4	6.68080E-08	2.9722E-07	2.9722E-07	1.00 Sa	76%		0.47157		
				(0.087958)		(3.4678E-03)	(0.015427)	(0.015427)	(0.028284)			0.167074		
	06/28/06	TH-229	R	**16.579944**		9.13975E-01	3.051762	3.051762	1.00 Sa	76%				
				(1.327284)		(4.2953E-02)	(0.17015)	(0.17015)	(0.028284)					
	06/28/06	TH-230	R	**0.120253**	U4	5.00536E-03	0.022134	0.022134	1.00 Sa	76%		0.288512		
				(0.087413)		(3.6094E-03)	(0.016039)	(0.016039)	(0.028284)			0.079126		
	06/28/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	76%		0.130354		
				(0.058912)		(0.0000E+00)	(0.010843)	(0.010843)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H571T1AA**	**PCI/SA**		05/10/06 12:10	06/28/06 03:43			1	1.00 Sa	
536403,000457					,J6E250379-8 v4.8.18		FILTER					THTF0615 Alq		0.084525 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 23:34	TH-228	1	1	ALP173	ED	N	N	2.5374E-01		N	44%	N		1.0000E+00	4.5045E-01	1.0494E+00	
			499.4666666	998.95			Y		(7.612E-03)			4%			(0.000E+00)	11.830809		
1	06/27/06 23:34	TH-229	226	0	ALP173	ED	Y	N	2.5374E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)						(0.000E+00)	11.830809		
2	06/27/06 23:34	TH-230	4	1	ALP173	ED	N	N	2.5374E-01		N	44%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)			4%			(0.000E+00)	11.830809		
3	06/27/06 23:34	TH-232	1	1	ALP173	ED	N	N	2.5374E-01		N	44%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)			4%			(0.000E+00)	11.830809		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**0.050791**	U4	1.00108E-03	0.009082	0.009082	1.00 Sa	44%		0.609276		
				(0.113689)		(2.2384E-03)	(0.020322)	(0.020322)	(0.028284)			0.167097		
	06/28/06	TH-229	R	**9.50319**		4.52483E-01	1.783234	1.783234	1.00 Sa	44%				
				(0.882558)		(3.0099E-02)	(0.130125)	(0.130125)	(0.028284)					
	06/28/06	TH-230	R	**0.336752**		7.00749E-03	0.06319	0.06319	1.00 Sa	44%		0.577098		
				(0.201363)		(4.1275E-03)	(0.03761)	(0.03761)	(0.028284)			0.158272		
	06/28/06	TH-232	R	**0.048108**	U4	1.00108E-03	0.009027	0.009027	1.00 Sa	44%		0.577098		
				(0.107685)		(2.2384E-03)	(0.0202)	(0.0202)	(0.028284)			0.158272		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H571V1AA**	**PCI/SA**		05/10/06 10:10	06/28/06 03:43			1	1.00 Sa	
536403,P-0621					,J6E250379-9 v4.8.18		FILTER					THTF0616 Alq		0.08326 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 23:34	TH-228	2	1	ALP174	ED	N	N	2.4814E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0495E+00	
			499.4666666	998.95			Y		(7.444E-03)			6%			(0.000E+00)	12.010552		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:9 RADCALC v4.8.18
STL Richland

Batch Nbr: 6146436 — Alpha Spec, ThIso by ALP , Calculated Results — 6/28/2006 9:20:06 PM

1	06/27/06 23:34	TH-229	428	1	ALP174	ED	Y	N	2.4814E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(7.444E-03)				(0.000E+00)	12.010552	
2	06/27/06 23:34	TH-230	5	0	ALP174	ED	N	N	2.4814E-01	N	85%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(7.444E-03)		6%		(0.000E+00)	12.010552	
3	06/27/06 23:34	TH-232	0	1	ALP174	ED	N	N	2.4814E-01	N	85%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(7.444E-03)		6%		(0.000E+00)	12.010552	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**0.081352**	U4	3.00322E-03	0.014328	0.014328	1.00 Sa	85%		0.3253		
				(0.081698)		(3.0032E-03)	(0.014365)	(0.014365)	(0.028284)			0.089215		
	06/28/06	TH-229	R	**18.661399**		8.55913E-01	3.449329	3.449329	1.00 Sa	85%				
				(1.509531)		(4.1433E-02)	(0.196439)	(0.196439)	(0.028284)					
	06/28/06	TH-230	R	**0.25683**		1.00107E-02	0.047472	0.047472	1.00 Sa	85%		0.139202		
				(0.117282)		(4.4769E-03)	(0.021506)	(0.021506)	(0.028284)					
	06/28/06	TH-232	R	**-0.025683**	U4	-1.00105E-03	-0.004747	-0.004747	1.00 Sa	85%		0.308094		
				(0.025792)		(1.0011E-03)	(0.00476)	(0.00476)	(0.028284)			0.084496		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H571X1AA**	**PCI/SA**		05/10/06 10:30	06/28/06 03:43			1	1.00 Sa	
536403,P-0622					,J6E250379-10 v4.8.18		FILTER					THTF0617 Alq		0.08278 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 23:34	TH-228	1	2	ALP175	ED	N	N	2.9360E-01		N	63%	N		1.0000E+00	4.5045E-01	1.0495E+00	
			499.4666666	998.95			Y		(8.808E-03)			4%			(0.000E+00)	12.080157		
1	06/27/06 23:34	TH-229	376	0	ALP175	ED	Y	N	2.9360E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)						(0.000E+00)	12.080157		
2	06/27/06 23:34	TH-230	5	2	ALP175	ED	N	N	2.9360E-01		N	63%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)			4%			(0.000E+00)	12.080157		
3	06/27/06 23:34	TH-232	1	0	ALP175	ED	N	N	2.9360E-01		N	63%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)			4%			(0.000E+00)	12.080157		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**1.0331E-06**	U4	3.34040E-08	1.809E-07	1.809E-07	1.00 Sa	63%		0.455738		
				(0.075837)		(2.4521E-03)	(0.01328)	(0.01328)	(0.028284)			0.144051		
	06/28/06	TH-229	R	**13.952279**		7.52803E-01	2.564047	2.564047	1.00 Sa	63%				
				(1.155563)		(3.8823E-02)	(0.152977)	(0.152977)	(0.028284)					
	06/28/06	TH-230	R	**0.234589**		8.00858E-03	0.043111	0.043111	1.00 Sa	63%		0.431639		
				(0.139298)		(4.6954E-03)	(0.025479)	(0.025479)	(0.028284)			0.136434		
	06/28/06	TH-232	R	**0.058647**	U4	2.00214E-03	0.010778	0.010778	1.00 Sa	63%		0.158933		
				(0.058906)		(2.0021E-03)	(0.010808)	(0.010808)	(0.028284)					

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:11 RADCALC v4.8.18
STL Richland

Batch Nbr: 6146436 — Alpha Spec, Thiso by ALP , Calculated Results — 6/28/2006 9:20:06 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H57101AA**	**PCI/SA**		05/10/06 10:45	06/28/06 03:43			1	1.00 Sa	
536403,P-0623					,J6E250379-11 v4.8.18		FILTER					THTF0618 Alq		0.082327 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 23:34	TH-228	24	2	ALP176	ED	N	N	2.9146E-01		N	70%	N		1.0000E+00	4.5045E-01	1.0495E+00	
			499.4666666	998.95			Y		(8.744E-03)			5%			(0.000E+00)	12.146614		
1	06/27/06 23:34	TH-229	415	3	ALP176	ED	Y	N	2.9146E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.744E-03)						(0.000E+00)	12.146614		
2	06/27/06 23:34	TH-230	31	1	ALP176	ED	N	N	2.9146E-01		N	70%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.744E-03)			5%			(0.000E+00)	12.146614		
3	06/27/06 23:34	TH-232	19	1	ALP176	ED	N	N	2.9146E-01		N	70%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.744E-03)			5%			(0.000E+00)	12.146614		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**1.306961**		4.60492E-02	0.227606	0.227606	1.00 Sa	70%		0.418225		
				(0.306326)		(9.9101E-03)	(0.051719)	(0.051719)	(0.028284)			0.132194		
	06/28/06	TH-229	R	**15.541451**		8.27883E-01	2.840467	2.840467	1.00 Sa	70%				
				(1.265607)		(4.0823E-02)	(0.16395)	(0.16395)	(0.028284)					
	06/28/06	TH-230	R	**1.641514**		6.10652E-02	0.300015	0.300015	1.00 Sa	70%		0.322814		
				(0.337265)		(1.1192E-02)	(0.059183)	(0.059183)	(0.028284)			0.088533		
	06/28/06	TH-232	R	**0.995673**		3.70395E-02	0.181976	0.181976	1.00 Sa	70%		0.322814		
				(0.253586)		(8.7843E-03)	(0.045153)	(0.045153)	(0.028284)			0.088533		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H57111AA**	**PCI/SA**		05/10/06 11:20	06/28/06 03:43			1	1.00 Sa	
536403,P-0624					,J6E250379-12 v4.8.18		FILTER					THTF0619 Alq		0.084306 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 23:34	TH-228	1	0	ALP177	ED	N	N	2.6130E-01		N	65%	N		1.0000E+00	4.5045E-01	1.0495E+00	
			499.4666666	998.95			Y		(7.839E-03)			4%			(0.000E+00)	11.861617		
1	06/27/06 23:34	TH-229	353	0	ALP177	ED	Y	N	2.6130E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.839E-03)						(0.000E+00)	11.861617		
2	06/27/06 23:34	TH-230	3	0	ALP177	ED	N	N	2.6130E-01		N	65%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.839E-03)			4%			(0.000E+00)	11.861617		
3	06/27/06 23:34	TH-232	0	1	ALP177	ED	N	N	2.6130E-01		N	65%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.839E-03)			4%			(0.000E+00)	11.861617		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:12 RADCALC v4.8.18
STL Richland

Batch Nbr: 6146436 — Alpha Spec, Thlso by ALP , Calculated Results — 6/28/2006 9:20:06 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**0.066884**	U4	2.00214E-03	0.011928	0.011928	1.00 Sa	65%		0.181255		
				(0.067185)		(2.0021E-03)	(0.011962)	(0.011962)	(0.028284)					
	06/28/06	TH-229	R	**14.45164**		7.06754E-01	2.704747	2.704747	1.00 Sa	65%				
				(1.211946)		(3.7617E-02)	(0.165252)	(0.165252)	(0.028284)					
	06/28/06	TH-230	R	**0.190047**		6.00641E-03	0.035569	0.035569	1.00 Sa	65%		0.171676		
				(0.111199)		(3.4678E-03)	(0.020711)	(0.020711)	(0.028284)					
	06/28/06	TH-232	R	**-0.031674**	U4	-1.00105E-03	-0.005928	-0.005928	1.00 Sa	65%		0.379969		
				(0.031817)		(1.0011E-03)	(0.005945)	(0.005945)	(0.028284)			0.104208		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H57121AA**	**PCI/SA**		05/10/06 12:00	06/28/06 03:43			1	1.00 Sa	
536403,P-0625					,J6E250379-13 v4.8.18		FILTER					THTF0620 Alq		0.083511 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/27/06 23:34	TH-228	1	0	ALP178	ED	N	N	3.1338E-01		N	81%	N		1.0000E+00	4.5045E-01	1.0494E+00	
			499.4666666	998.95			Y		(9.401E-03)			5%			(0.000E+00)	11.974425		
1	06/27/06 23:34	TH-229	524	1	ALP178	ED	Y	N	3.1338E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(9.401E-03)						(0.000E+00)	11.974425		
2	06/27/06 23:34	TH-230	8	0	ALP178	ED	N	N	3.1338E-01		N	81%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(9.401E-03)			5%			(0.000E+00)	11.974425		
3	06/27/06 23:34	TH-232	1	0	ALP178	ED	N	N	3.1338E-01		N	81%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(9.401E-03)			5%			(0.000E+00)	11.974425		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**0.044828**	U4	2.00214E-03	0.00792	0.00792	1.00 Sa	81%		0.121485		
				(0.04501)		(2.0021E-03)	(0.007939)	(0.007939)	(0.028284)					
	06/28/06	TH-229	R	**18.040071**		1.04812E+00	3.344545	3.344545	1.00 Sa	81%				
				(1.41047)		(4.5842E-02)	(0.177386)	(0.177386)	(0.028284)					
	06/28/06	TH-230	R	**0.339685**		1.60171E-02	0.062976	0.062976	1.00 Sa	81%		0.115068		
				(0.123928)		(5.6629E-03)	(0.022689)	(0.022689)	(0.028284)					
	06/28/06	TH-232	R	**0.042461**	U4	2.00214E-03	0.007872	0.007872	1.00 Sa	81%		0.115068		
				(0.042632)		(2.0021E-03)	(0.007891)	(0.007891)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H57131AA**	**PCI/SA**		05/10/06 12:15	06/28/06 12:43			1	1.00 Sa	
536403,P-0626					,J6E250379-14 v4.8.18		FILTER					THTF0621 Alq		0.083985 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 08:33	TH-228	10	6	ALP171	ED	N	N	2.9087E-01		N	94%	N		1.0000E+00	4.5045E-01	1.0498E+00	
			499.4666666	998.95			Y		(8.726E-03)			6%			(0.000E+00)	11.906842		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
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RecCnt:14 RADCALC v4.8.18
STL Richland

Batch Nbr: 6146436

Alpha Spec, Thlso by ALP , Calculated Results

6/28/2006 9:20:07 PM

1	06/28/06 08:33	TH-229	560	2	ALP171	ED	Y	N	2.9087E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(8.726E-03)				(0.000E+00)	11.906842	
2	06/28/06 08:33	TH-230	9	1	ALP171	ED	N	N	2.9087E-01	N	94%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(8.726E-03)		6%		(0.000E+00)	11.906842	
3	06/28/06 08:33	TH-232	0	1	ALP171	ED	N	N	2.9087E-01	N	94%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(8.726E-03)		6%		(0.000E+00)	11.906842	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**0.288976**		1.40150E-02	0.051322	0.051322	1.00 Sa	94%		0.444357		
				(0.142354)		(6.7896E-03)	(0.02511)	(0.02511)	(0.028284)			0.16634		
	06/28/06	TH-229	R	**20.637371**		1.11919E+00	3.847788	3.847788	1.00 Sa	94%				
				(1.597726)		(4.7400E-02)	(0.199704)	(0.199704)	(0.028284)					
	06/28/06	TH-230	R	**0.332242**		1.70182E-02	0.061946	0.061946	1.00 Sa	94%		0.234446		
				(0.122529)		(6.0893E-03)	(0.022566)	(0.022566)	(0.028284)			0.064298		
	06/28/06	TH-232	R	**-0.019543**	U4	-1.00105E-03	-0.003644	-0.003644	1.00 Sa	94%		0.234446		
				(0.019621)		(1.0011E-03)	(0.003652)	(0.003652)	(0.028284)			0.064298		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H57141AA**	**PCI/SA**		05/10/06 10:15	06/28/06 12:43			1	1.00 Sa	
536403,P-0627					,J6E250379-15 v4.8.18		FILTER					THTF0622 Alq		0.084232 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 08:33	TH-228	2	4	ALP172	ED	N	N	2.9949E-01		N	78%	N		1.0000E+00	4.5045E-01	1.0499E+00	
			499.4666666	998.95			Y		(8.985E-03)			5%			(0.000E+00)	11.871994		
1	06/28/06 08:33	TH-229	472	4	ALP172	ED	Y	N	2.9949E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)						(0.000E+00)	11.871994		
2	06/28/06 08:33	TH-230	3	1	ALP172	ED	N	N	2.9949E-01		N	78%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			5%			(0.000E+00)	11.871994		
3	06/28/06 08:33	TH-232	0	0	ALP172	ED	N	N	2.9949E-01		N	78%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			5%			(0.000E+00)	11.871994		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**1.6199E-06**	U4	6.68080E-08	2.8853E-07	2.8853E-07	1.00 Sa	78%		0.450813		
				(0.084086)		(3.4678E-03)	(0.014976)	(0.014976)	(0.028284)			0.15972		
	06/28/06	TH-229	R	**16.802661**		9.41004E-01	3.142012	3.142012	1.00 Sa	78%				
				(1.338028)		(4.3544E-02)	(0.173274)	(0.173274)	(0.028284)					
	06/28/06	TH-230	R	**0.114907**	U4	5.00536E-03	0.021487	0.021487	1.00 Sa	78%		0.275685		
				(0.083521)		(3.6094E-03)	(0.015569)	(0.015569)	(0.028284)			0.075608		
	06/28/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	78%		0.124559		
				(0.056293)		(0.0000E+00)	(0.010526)	(0.010526)	(0.028284)					

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16

RADCALC v4.8.18

STL Richland

Batch Nbr: 6146436 — Alpha Spec, ThIso by ALP , Calculated Results — 6/28/2006 9:20:07 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H6AW11AA**	**PCI/SA**	**B**	05/10/06 10:20	06/28/06 12:43			1	1.00 Sa	
0,INTRA-LAB BLANK					,J6E260000-436		FILTER					THTF0623 Alq		1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 08:33	TH-228	2	1	ALP173	ED	N	N	2.5374E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0499E+00	
			499.4666666	998.95			Y		(7.612E-03)			6%			(0.000E+00)	1.00		
1	06/28/06 08:33	TH-229	435	0	ALP173	ED	Y	N	2.5374E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)						(0.000E+00)	1.00		
2	06/28/06 08:33	TH-230	6	1	ALP173	ED	N	N	2.5374E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)			6%			(0.000E+00)	1.00		
3	06/28/06 08:33	TH-232	0	1	ALP173	ED	N	N	2.5374E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)			6%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-228	R	**0.006652**	U4	3.00322E-03	0.014066	0.014066	1.00 Sa	85%		0.026599		
				(0.006678)		(3.0032E-03)	(0.014102)	(0.014102)	(0.017321)			0.007295		
	06/28/06	TH-229	R	**1.546094**		8.70929E-01	3.432331	3.432331	1.00 Sa	85%				
				(0.119748)		(4.1758E-02)	(0.194127)	(0.194127)	(0.017321)					
	06/28/06	TH-230	R	**0.023092**		1.10118E-02	0.051265	0.051265	1.00 Sa	85%		0.025183		
				(0.010697)		(5.0053E-03)	(0.023593)	(0.023593)	(0.017321)			0.006907		
	06/28/06	TH-232	R	**-0.002099**	U4	-1.00105E-03	-0.00466	-0.00466	1.00 Sa	85%		0.025183		
				(0.002108)		(1.0011E-03)	(0.004672)	(0.004672)	(0.017321)			0.006907		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
17	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H6AW11AC**	**PCI/SA**	**S**	05/10/06 10:20	06/28/06 12:43		THSO0077	1	1.00 Sa	
0,INTRA-LAB CHECK					,J6E260000-436		FILTER					THSO0077 Alq		1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
6	06/28/06 08:33	TH-229	379	0	ALP174	ED	Y	N	2.4814E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.444E-03)						(0.000E+00)	1.00		
7	06/28/06 08:33	TH-230	390	1	ALP174	ED	N	N	2.4814E-01		N	76%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.444E-03)			5%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/28/06	TH-229	R	**1.377477**		7.58809E-01	3.058002	3.058002	1.00 Sa	76%				
				(0.109668)		(3.8977E-02)	(0.181907)	(0.181907)	(0.017321)					
	06/28/06	TH-230	R	**1.871021**		7.79832E-01	4.153671	4.153671	1.00 Sa	76%	103%	0.028812		
				(0.195339)		(3.9552E-02)	(0.373827)	(0.373827)	(0.017321)			0.007902		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17 RADCALC v4.8.18 STL Richland

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST

5/28 0539

C.R. Technician OD
Date Counted 6/27/06
C.R. Analyst CP
Date Analyzed 6/28/06

Counting Time
Sample 500 Minutes

Background See Alpha Analysis Report BRC 5/10/06

SOP's
Operating: RICHRD008
Review: RICHRD0016 6/4/6436

WorkOrder #	Th-229 (4845 KeV) Tracer from Th-234 Beta Count (7)				TOTAL COUNTS			Det #	Comment
					Th-228 (5423 KeV)	Th-230 (4688 KeV)	Th-232 (4010 KeV)		
	ID	Activity	ROI Cts	BKG	(6)	(8)	(9)		
H5709IAA		10		0	See Alpha Analysis Report for ROI Information			114	
H5716IAA		10		0	See Alpha Analysis Report for ROI Information			116	
H5716IAA		10		0	See Alpha Analysis Report for ROI Information			117	
H5719IAA		10		0	See Alpha Analysis Report for ROI Information			119	
H5719IAA		10		0	See Alpha Analysis Report for ROI Information			120	
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				

Comments:

Form No: RC-012, 10/02, Rev 9

Approved by: G

Date: 6/28/06

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H57091AA

Detector: ALP114 1
Report Date: 28-Jun-06 06:26 AM
Acquire Date: 27-JUN-2006 21:19:05.95
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	8	5	0.011	5423.2	151.1	312	332
TH-229	415	0	0.830	4845.3	318.4	243	285
TH-230	6	2	0.010	4687.7	152.0	215	235
TH-232	2	0	0.004	4013.0	152.9	126	146

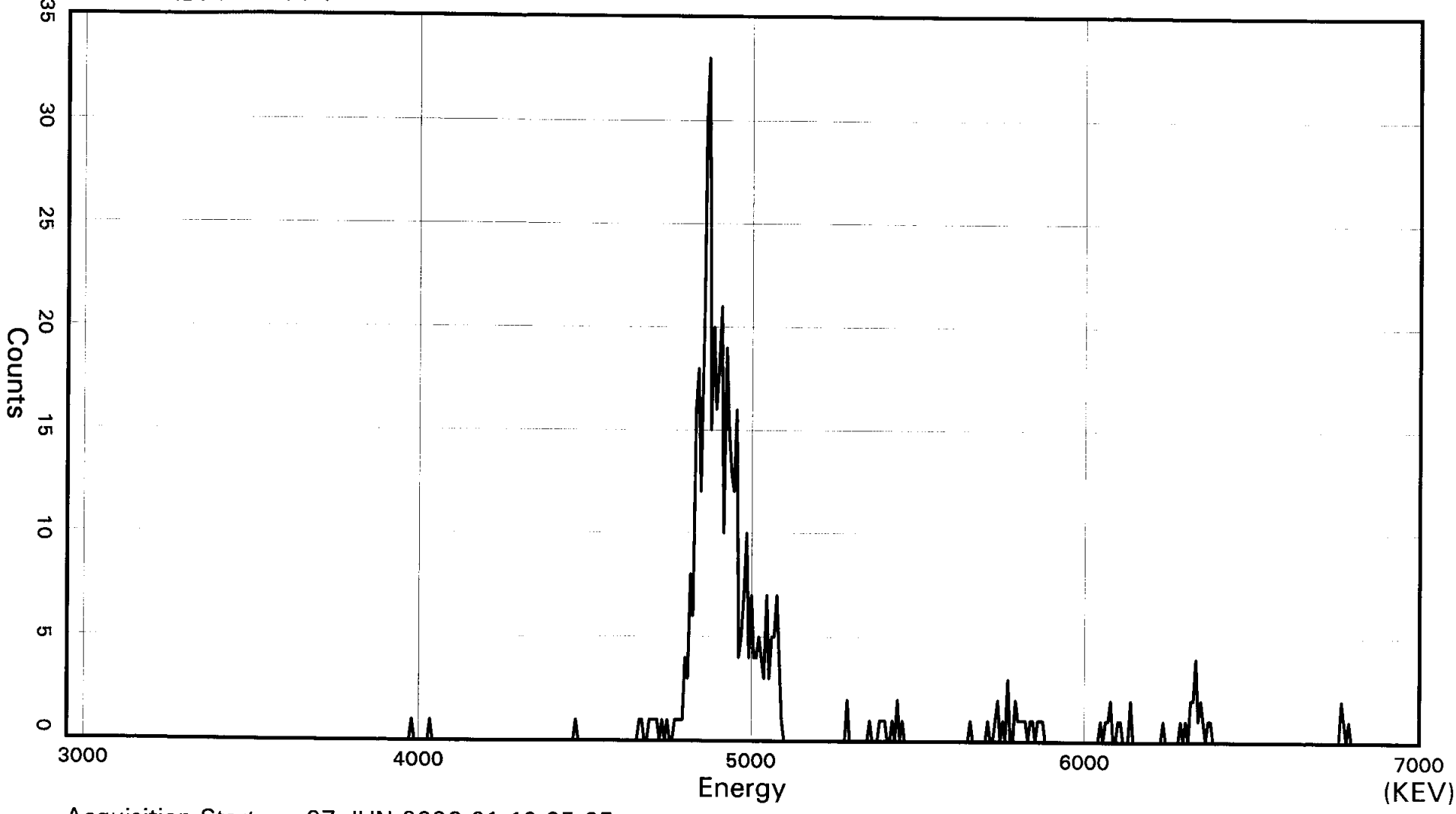
End of Alpha Region Report
(Produced by ANAL Report)

STL Richland WA.

TH BRC

Sample ID: H57091AA
Detector ID: ALP114 1

Batch ID: 6146436



Acquisition Start: 27-JUN-2006 21:19:05.95
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:01.00

Energy Coefficients:
Offset: 2.92767E+03
Slope: 7.71015E+00
Quadrature: -2.44061E-04

SAMPLE IDENTITY: H57091AA

TITLE : TH BRC

DETECTOR : ALP114 1
CONFIGURATION NAME : RDND06$DKA100:[ALP114.SAMPLE]H57091AA_270662
119.CNF;1
ACQUIRE DATE of BACKGROUND: 22-JUN-2006 10:15:05

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 21:19:05 CALIB DATE : 22-JUN-2006 09:29:59

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:01

OFFSET : 2927.67 keV CONSTANT FWHM : 7.40000 Channels
SLOPE : 7.71015 keV/C SENSITIVITY : 6.00000 Std Dev's
QUAD COEFF : -.244061E-03 keV/C^2 SUM SENSITIVITY: 0.10000 %

Alpha Spectrum Listing
for Spectra Not Processed by Alp_rgn_cnts
(Version: 29-Jun-92)

Sample Identity: H57091AA
Detector: ALP114 1
Report Date: 28-Jun-06 05:39 AM
Acquire Date: 27-JUN-2006 21:19:05.95

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	12		251	0		301	0		351	0		401	1		451	0		501
		2	0		52	0		102	0		152	1		202	19		252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	30		253	0		303	0		353	0		403	1		453	0		503
0		4	0		54	0		104	0		154	0		204	33		254	0		304	0		354	0		404	1		454	0		504
0		5	0		55	0		105	0		155	0		205	15		255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	20		256	0		306	0		356	0		406	0		456	2		506
0		7	0		57	0		107	0		157	0		207	16		257	0		307	0		357	0		407	0		457	1		507
0		8	0		58	0		108	0		158	0		208	18		258	0		308	1		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0		209	21		259	2		309	0		359	0		409	0		459	1		509
0		10	0		60	0		110	0		160	0		210	10		260	0		310	0		360	1		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	19		261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	15		262	0		312	0		362	1		412	0		462	0		512
0		13	0		63	0		113	0		163	0		213	13		263	0		313	0		363	1		413	0		463			
0		14	0		64	0		114	0		164	0		214	12		264	0		314	0		364	2		414	0		464			
0		15	0		65	0		115	0		165	0		215	16		265	0		315	1		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	4		266	0		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0		217	5		267	0		317	0		367	1		417	0		467			
0		18	0		68	0		118	0		168	0		218	7		268	1		318	1		368	1		418	0		468			
0		19	0		69	0		119	0		169	0		219	10		269	0		319	2		369	0		419	0		469			
0		20	0		70	0		120	0		170	0		220	4		270	0		320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0		221	7		271	0		321	1		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	4		272	1		322	0		372	2		422	0		472			
0		23	0		73	0		123	0		173	0		223	4		273	1		323	3		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	5		274	1		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	4		275	0		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	3		276	0		326	2		376	0		426	0		476			
0		27	0		77	0		127	0		177	1		227	7		277	1		327	1		377	0		427	0		477			
0		28	0		78	0		128	0		178	1		228	3		278	0		328	1		378	0		428	0		478			
0		29	0		79	0		129	0		179	0		229	5		279	2		329	1		379	0		429	0		479			
0		30	0		80	0		130	0		180	0		230	5		280	0		330	1		380	0		430	0		480			
0		31	0		81	0		131	0		181	1		231	7		281	1		331	0		381	0		431	0		481			
0		32	0		82	0		132	0		182	1		232	4		282	0		332	1		382	0		432	0		482			
0		33	0		83	0		133	0		183	1		233	1		283	0		333	1		383	0		433	0		483			
0		34	0		84	0		134	0		184	1		234	0		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	0		335	1		385	1		435	0		485			
0		36	0		86	0		136	0		186	1		236	0		286	0		336	1		386	0		436	0		486			
0		37	0		87	1		137	0		187	0		237	0		287	0		337	1		387	0		437	0		487			
0		38	0		88	0		138	0		188	1		238	0		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	0		340	0		390	0		440	0		490			
0		41	0		91	0		141	0		191	1		241	0		291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	1		242	0		292	0		342	0		392	1		442	0		492			
0		43	0		93	0		143	0		193	1		243	0		293	0		343	0		393	0		443	0		493			
0		44	0		94	1		144	0		194	1		244	0		294	0		344	0		394	1		444	0		494			
0		45	0		95	0		145	0		195	4		245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	3		246	0		296	0		346	0		396	2		446	0		496			
0		47	0		97	0		147	0		197	8		247	0		297	0		347	0		397	2		447	0		497			
0		48	0		98	0		148	0		198	6		248	0		298	0		348	0		398	4		448	0		498			
0		49	0		99	0		149	0		199	16		249	0		299	0		349	0		399	1		449	0		499			

0 50 0 100 0 150 0 200 18 250 0 300 0 350 0 400 2 450 0 500

VMS Peak Search Report V1.9 Generated 28-JUN-2006 05:39:10

```
Configuration     : RDND06$DKA100:[ALP114.SAMPLE]H57091AA_270662119.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 21:19:05
Sample ID         : H57091AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP114               Detector geometry:
Elapsed live time: 0 08:20:01.00         Elapsed real time: 0 08:20:01.00   0.0%
Start energy      :  2950.80 KEV         End energy       :  6811.29 KEV
Sensitivity       :     6.00             Sum Sensitivity  :     0.10
No peaks were found
```

VMS Nuclide Identification Report V3.1 Generated 28-JUN-2006 05:39:11

```
Configuration     : RDND06$DKA100:[ALP114.SAMPLE]H57091AA_270662119.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 21:19:05
Sample ID         : H57091AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP114               Detector geometry:
Elapsed live time: 0 08:20:01.00         Elapsed real time: 0 08:20:01.00   0.0%
Energy tolerance :    80.00 KEV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

**** There are no nuclides meeting summary criteria ****

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

```
  Error Report  (Date: 28-Jun-06  05:39 AM)

Program: Alp_rgn_cnts
subroutine: Main
Message: No trace pk or nucl
Record being processed:  7

System Status Message:

%NONAME-W-NOMSG, Message number 00000000
```

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H571F1AA

Detector: ALP116 1
Report Date: 28-Jun-06 06:26 AM
Acquire Date: 27-JUN-2006 21:19:16.68
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	1	3	-0.001	5423.2	149.6	326	346
TH-229	299	0	0.598	4845.3	382.8	249	300
TH-230	3	0	0.006	4687.7	150.4	228	248
TH-232	2	0	0.004	4013.0	151.2	139	159

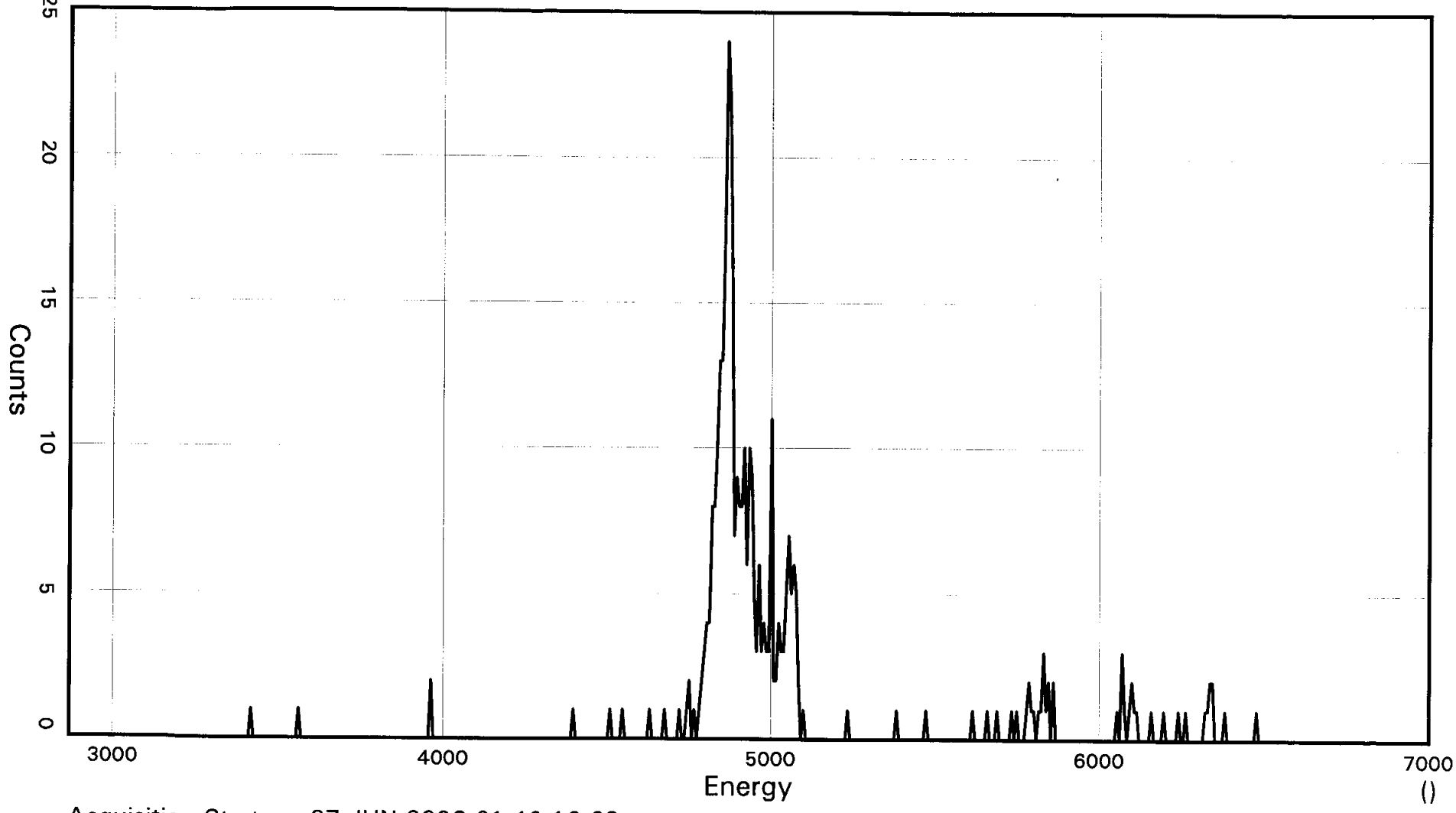
End of Alpha Region Report
(Produced by ANAL Report)

STL Richland WA.

TH BRC

Sample ID: H571F1AA
Detector ID: ALP116 1

Batch ID: 6146436



Acquisition Start: 27-JUN-2006 21:19:16.68
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:02.00

Energy Coefficients:
Offset: 2.84555E+03
Slope: 7.62237E+00
Quadrature: -2.12519E-04

SAMPLE IDENTIITY: H571F1AA

TITLE : TH BRC

DETECTOR : ALP116 1
CONFIGURATION NAME : RDND06$DKA100:[ALP116.SAMPLE]H571F1AA_270662
119.CNF;1
ACQUIRE DATE of BACKGROUND: 22-JUN-2006 10:15:09

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 21:19:16 CALIB DATE : 22-JUN-2006 09:30:10

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:02

OFFSET : 2845.55 keV CONSTANT FWHM : 8.83333 Channels
SLOPE : 7.62237 keV/C SENSITIVITY : 6.00000 Std Dev's
QUAD COEFF : -.212519E-03 keV/C^2 SUM SENSITIVITY: 0.10000 %

Alpha Spectrum Listing
for Spectra Not Processed by Alp_rgn_cnts
(Version: 29-Jun-92)

Sample Identity: H571F1AA
Detector: ALP116 1
Report Date: 28-Jun-06 05:39 AM
Acquire Date: 27-JUN-2006 21:19:16.68

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	1		251	0		301	0		351	0		401	1		451	0		501
		2	0		52	0		102	0		152	0		202	2		252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	1		254	0		304	0		354	0		404	1		454	0		504
0		5	0		55	0		105	0		155	1		205	0		255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	1		256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	2		257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0		208	3		258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0		209	4		259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0		210	4		260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	8		261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	8		262	0		312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0		213	10		263	0		313	0		363	0		413	1		463			
0		14	0		64	0		114	0		164	0		214	13		264	0		314	0		364	0		414	2		464			
0		15	0		65	0		115	0		165	0		215	13		265	0		315	0		365	0		415	2		465			
0		16	0		66	0		116	0		166	0		216	18		266	1		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0		217	24		267	0		317	1		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	22		268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0		219	15		269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0		170	1		220	7		270	0		320	0		370	0		420	1		470			
0		21	0		71	0		121	0		171	0		221	9		271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	8		272	0		322	0		372	0		422	0		472			
0		23	0		73	0		123	0		173	0		223	8		273	0		323	1		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	10		274	0		324	0		374	0		424	0		474			
0		25	1		75	0		125	0		175	1		225	6		275	0		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	10		276	0		326	0		376	1		426	0		476			
0		27	0		77	0		127	0		177	0		227	9		277	0		327	1		377	0		427	0		477			
0		28	0		78	0		128	0		178	0		228	5		278	0		328	0		378	3		428	0		478			
0		29	0		79	0		129	0		179	0		229	3		279	0		329	0		379	1		429	0		479			
0		30	0		80	0		130	0		180	0		230	6		280	0		330	0		380	0		430	0		480			
0		31	0		81	0		131	0		181	0		231	3		281	0		331	0		381	1		431	0		481			
0		32	0		82	0		132	0		182	0		232	4		282	0		332	0		382	2		432	0		482			
0		33	0		83	0		133	0		183	0		233	3		283	0		333	1		383	1		433	1		483			
0		34	0		84	0		134	0		184	0		234	3		284	0		334	0		384	1		434	0		484			
0		35	0		85	0		135	0		185	0		235	11		285	0		335	1		385	0		435	0		485			
0		36	0		86	0		136	0		186	1		236	2		286	1		336	0		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	2		287	0		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	4		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	3		289	0		339	1		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	3		290	0		340	2		390	1		440	0		490			
0		41	0		91	0		141	0		191	0		241	5		291	0		341	1		391	0		441	0		491			
0		42	0		92	0		142	0		192	1		242	7		292	0		342	1		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	5		293	0		343	0		393	0		443	0		493			
0		44	1		94	0		144	0		194	0		244	6		294	0		344	1		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	5		295	0		345	1		395	1		445	0		495			
0		46	0		96	0		146	0		196	0		246	2		296	0		346	3		396	0		446	0		496			
0		47	0		97	2		147	0		197	0		247	0		297	0		347	1		397	0		447	0		497			
0		48	0		98	0		148	0		198	1		248	1		298	1		348	2		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	0		299	0		349	0		399	0		449	0		499			

0 50 0 100 0 150 0 200 0 250 0 300 0 350 2 400 0 450 0 500

VMS Peak Search Report V1.9 Generated 28-JUN-2006 05:39:20

```
Configuration     : RDND06$DKA100:[ALP116.SAMPLE]H571F1AA_270662119.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 21:19:16
Sample ID         : H571F1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP116               Detector geometry:
Elapsed live time: 0 08:20:02.00         Elapsed real time: 0 08:20:02.00   0.0%
Start energy      :  2868.42             End energy       :  6692.50
Sensitivity       :     6.00             Sum Sensitivity  :     0.10
No peaks were found
```

VMS Nuclide Identification Report V3.1 Generated 28-JUN-2006 05:39:21

```
Configuration     : RDND06$DKA100:[ALP116.SAMPLE]H571F1AA_270662119.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 21:19:16
Sample ID         : H571F1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP116               Detector geometry:
Elapsed live time: 0 08:20:02.00         Elapsed real time: 0 08:20:02.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

**** There are no nuclides meeting summary criteria ****

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

```
  Error Report  (Date: 28-Jun-06  05:39 AM)

Program: Alp_rgn_cnts
subroutine: Main
Message: No trace pk or nucl
Record being processed:  7

System Status Message:

%NONAME-W-NOMSG, Message number 00000000
```

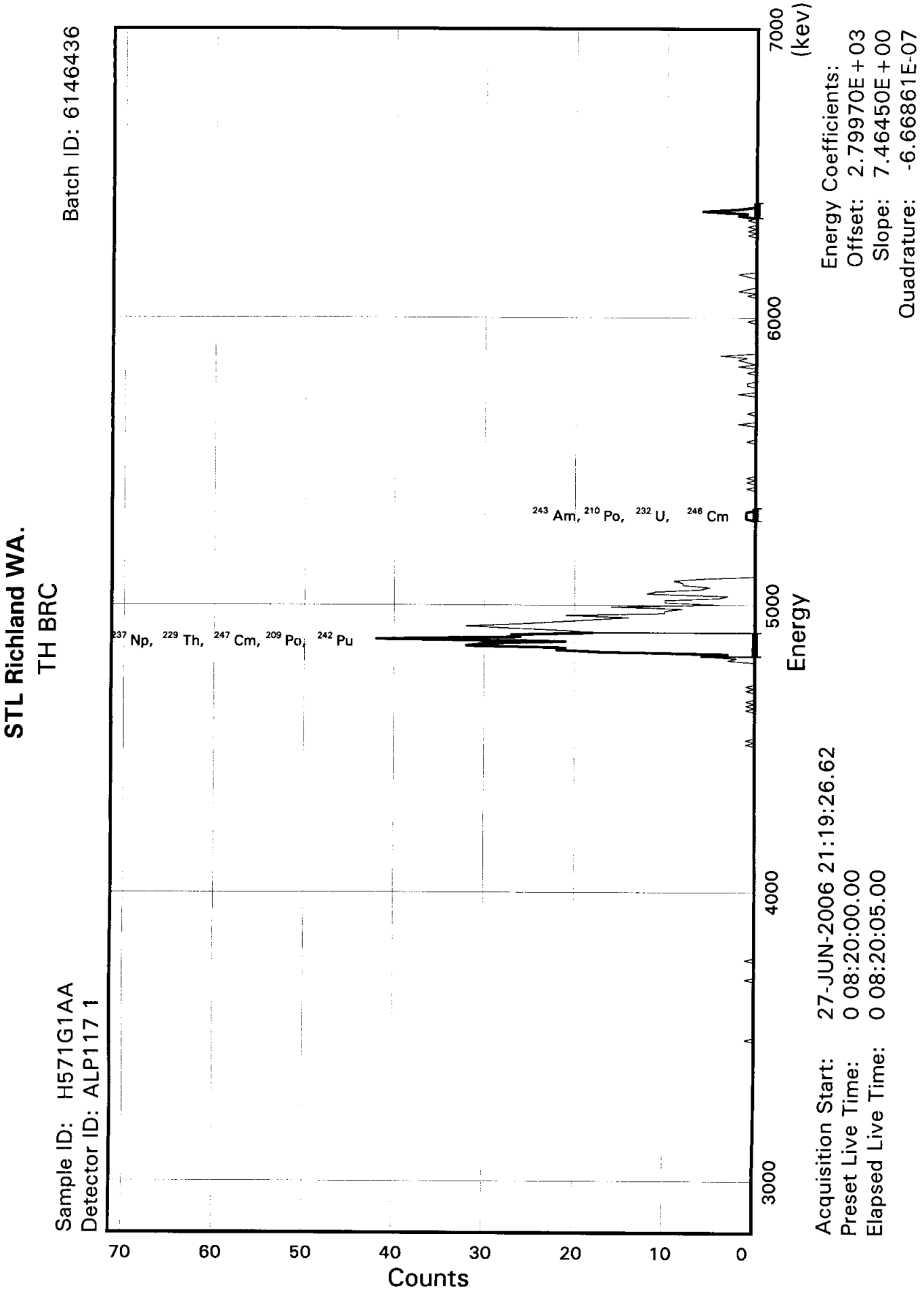
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H571G1AA

Detector: ALP117 1
Report Date: 28-Jun-06 06:26 AM
Acquire Date: 27-JUN-2006 21:19:26.62
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 2500 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	6	1	0.012	5423.2	149.3	336	356
TH-229	591	4	1.180	4845.3	343.3	265	311
TH-230	5	0	0.010	4687.7	149.3	238	258
TH-232	0	0	0.000	4013.0	149.3	148	168

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6146436
Sample ID: H571G1AA
Detector ID: ALP117 1
237 Np, 229 Th, 247 Cm, 209 Po, 242 Pu
243 Am, 210 Po, 232 U, 246 Cm
Counts
70
60
50
40
30
20
10
0
Energy
3000
4000
5000
6000
7000
(kev)
Acquisition Start: 27-JUN-2006 21:19:26.62
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:05.00
Energy Coefficients:
Offset: 2.79970E+03
Slope: 7.46450E+00
Quadrature: -6.66861E-07

SAMPLE IDENTIITY: H571G1AA

TITLE : TH BRC

DETECTOR : ALP117 1
CONFIGURATION NAME : RDND06$DKA100:[ALP117.SAMPLE]H571G1AA_270662
119.CNF;1
ACQUIRE DATE of BACKGROUND: 24-JUN-2006 05:58:58

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 21:19:26 CALIB DATE : 22-JUN-2006 09:30:15

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:05

OFFSET : 2799.70 keV CONSTANT FWHM : 6.83333 Channels
SLOPE : 7.46450 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.666861E-06 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571G1AA

Detector: ALP117 1
Report Date: 28-Jun-06 05:39 AM
Acquire Date: 27-JUN-2006 21:19:26.62
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-15.995	5144.5	82.1	307	318	0.00	0.00	M
PO-209	270	0	0	0.540	4912.8	82.1	271	282	0.00	0.00	P
PO-210	4	0	0	0.008	5334.0	44.8	334	340	0.00	0.00	P
AC-227	3	3	3	0.004	6067.6	82.1	431	442	0.00	0.00	S
TH-227	3	3	3	0.004	6067.6	82.1	431	442	0.00	0.00	S
TH-228	3	0	0	0.006	5452.8	82.1	348	359	0.00	0.00	S
TH-229	270	0	0	0.540	4874.9	82.1	271	282	0.00	0.00	P
TH-230	3	0	0	0.006	4717.3	82.1	250	261	0.00	0.00	
TH-232	0	0	0	0.000	4042.6	82.1	159	170	0.00	0.00	
U-232	4	0	0	0.008	5349.8	44.8	334	340	0.00	0.00	P
U-234	-9999	-9999	0	-15.995	4804.2	82.1	262	273	0.00	0.00	I
U-235	0	0	0	0.000	4427.4	82.1	211	222	0.00	0.00	
PU-236	4	32	3	-0.006	5797.3	82.1	395	406	0.00	0.00	S
NP-237	270	0	0	0.540	4817.6	82.1	271	282	0.00	0.00	P
PU-238	0	1	0	0.000	5528.6	82.1	359	370	0.00	0.00	S
U-238	0	1	0	0.000	4227.6	82.1	184	195	0.00	0.00	
PU-239	-9999	-9999	0	-15.995	5186.2	82.1	313	324	0.00	0.00	M
AM-241	-9999	-9999	0	-15.995	5515.2	82.1	357	368	0.00	0.00	M
AM-242M	0	0	0	0.000	5236.4	82.1	319	330	0.00	0.00	S
CM-242	-9999	-9999	0	-15.995	6142.3	82.1	441	452	0.00	0.00	M
PU-242	270	0	0	0.540	4930.1	82.1	271	282	0.00	0.00	P
AM-243	4	0	0	0.008	5304.9	44.8	334	340	0.00	0.00	P
CM-244	10	68	3	-0.008	5834.4	82.1	400	411	0.00	0.00	S
CM-246	4	0	0	0.008	5416.1	44.8	334	340	0.00	0.00	P
CM-247	270	0	0	0.540	4900.0	82.1	271	282	0.00	0.00	P
CM-248	39	1	6	0.078	5108.2	82.1	302	313	0.00	0.00	S H

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571G1AA
Detector: ALP117 1
Report Date: 28-Jun-06 05:39 AM
Acquire Date: 27-JUN-2006 21:19:26.62

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0	+	251	11		301	0	+	351	0	@	401	0	-	451
		2	0		52	0		102	0		152	0		202	0	+	252	6	+	302	1	+	352	0	@	402	0	-	452
0		3	0		53	0		103	0		153	0		203	0	+	253	5	+	303	0	+	353	1	@	403	0		453
0		4	0		54	0		104	0		154	0		204	0	+	254	8	+	304	1	+	354	0	@	404	0		454
0		5	0		55	0		105	0		155	0		205	1	+	255	8	+	305	0	+	355	0	@	405	0		455
0		6	0		56	0		106	0		156	0		206	0	+	256	9	+	306	0	+	356	2	@	406	0		456
0		7	0		57	0		107	0		157	0		207	1	+	257	6	@	307	0	@	357	0	-	407	0		457
0		8	0		58	0		108	0		158	0		208	0	+	258	0	@	308	0	@	358	1	-	408	0		458
0		9	0		59	0		109	0	+	159	0		209	0	+	259	0	@	309	0	@	359	2	-	409	0		459
0		10	0		60	0		110	0	+	160	0		210	0	+	260	0	@	310	0	@	360	1	-	410	0		460
0		11	0		61	0		111	0	+	161	0	+	211	0	+	261	0	@	311	0	@	361	4	-	411	0		461
0		12	0		62	0		112	0	+	162	0	+	212	0	-	262	0	@	312	0	@	362	0		412	0		462
0		13	0		63	0		113	0	+	163	0	+	213	0	-	263	0	@	313	0	@	363	0		413	0		463
0		14	0		64	0		114	0	+	164	0	+	214	0	-	264	0	@	314	0	@	364	0		414	0		464
0		15	0		65	0		115	0	+	165	0	+	215	0	-	265	0	@	315	0	@	365	0		415	0		465
0		16	0		66	0		116	0	+	166	0	+	216	0	-	266	0	@	316	0	@	366	0		416	0		466
0		17	0		67	0		117	0	+	167	0	+	217	0	-	267	0	@	317	0	@	367	0		417	1		467
0		18	0		68	0		118	0	+	168	0	+	218	0	-	268	0	@	318	0	@	368	0		418	0		468
0		19	0		69	0		119	0	+	169	0	+	219	3	-	269	0	@	319	0	+	369	0		419	1		469
0		20	0		70	1		120	0	+	170	0	+	220	2	-	270	0	@	320	0	+	370	0		420	0		470
0		21	0		71	0		121	0		171	0	+	221	6	-	271	0	@	321	1		371	0		421	1		471
0		22	0		72	0		122	0		172	0	+	222	3	@	272	0	@	322	0		372	0		422	0		472
0		23	0		73	0		123	0		173	0		223	17	@	273	0	@	323	0		373	0		423	0		473
0		24	0		74	0		124	0		174	0		224	22	@	274	0	@	324	0		374	0		424	1		474
0		25	0		75	0		125	0		175	0		225	21	@	275	0	-	325	0		375	0		425	0		475
0		26	0		76	0		126	0		176	0		226	32	@	276	0	-	326	0		376	0		426	2		476
0		27	0		77	0		127	0		177	0		227	30	@	277	0	-	327	0		377	1		427	1		477
0		28	0		78	0		128	0		178	0		228	21	@	278	0	-	328	0		378	0		428	6		478
0		29	0		79	1		129	0		179	0		229	42	@	279	0	-	329	2		379	0		429	2		479
0		30	0		80	0		130	0		180	1		230	26	@	280	0	-	330	0		380	0		430	0		480
0		31	0		81	0		131	0		181	0		231	27	@	281	0		331	0		381	0	@	431	0		481
0		32	0		82	0		132	0		182	1		232	18		282	0		332	0		382	0	@	432	0		482
0		33	0		83	0		133	0		183	0		233	21		283	0		333	0		383	0	@	433	0		483
0		34	0		84	0		134	0	+	184	0		234	27		284	0	@	334	1		384	0	@	434	0		484
0		35	0		85	0		135	0	+	185	0		235	32		285	1	@	335	0		385	0	@	435	0		485
0		36	0		86	0		136	0	+	186	0		236	26		286	1	@	336	0		386	0	@	436	0		486
0		37	0		87	0		137	0	+	187	0		237	22		287	1	@	337	0		387	0	@	437	0		487
0		38	0		88	0		138	0	+	188	0		238	18		288	1	@	338	0		388	0	@	438	0		488
0		39	0		89	0		139	0	+	189	0		239	14		289	0	@	339	0		389	1	@	439	0		489
0		40	0		90	0		140	0	+	190	0		240	21		290	0		340	0		390	0	@	440	0		490
0		41	0		91	0		141	0	+	191	0		241	10		291	0		341	0		391	2	-	441	0		491
0		42	1		92	0		142	0	+	192	0		242	10		292	0		342	0		392	1	@	442	0		492
0		43	0		93	0		143	0	+	193	0		243	8		293	0		343	2		393	0	-	443	0		493
0		44	0		94	0		144	0	+	194	0		244	16		294	0		344	0		394	0	-	444	0		494
0		45	0		95	0		145	0	+	195	0		245	4		295	0		345	0	+	395	0	-	445	0		495
0		46	0		96	0		146	0		196	1		246	10		296	0		346	0	+	396	0	-	446	0		496
0		47	0		97	0		147	0		197	0		247	10		297	0		347	1	+	397	0	-	447	0		497
0		48	0		98	0		148	0		198	1		248	4		298	0	+	348	1	+	398	1	-	448	0		498
0		49	0		99	0		149	0		199	0		249	3		299	1	+	349	0	+	399	2	-	449	0		499
0		50	0		100	0		150	0		200	1	+	250	12		300	0	+	350	0	@	400	0	-	450	0		500

VMS Peak Search Report V1.9 Generated 28-JUN-2006 05:39:34

Configuration	: RDND06$DKA100:[ALP117.SAMPLE]H571G1AA_270662119.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 10-MAY-2006 12:00:00	Acquisition date	: 27-JUN-2006 21:19:26
Sample ID	: H571G1AA	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP117	Detector geometry	:
Elapsed live time	: 0 08:20:05.00	Elapsed real time	: 0 08:20:05.00 0.0%
Start energy	: 2822.09 kev	End energy	: 6621.34 kev
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.90	270	0	67.18	278.02	271	11	9.00E-03	6.1	
2	0	5311.42	4	0	29.86	336.50	334	6	1.33E-04	50.0	
3	0	6363.84	11	0	29.86	477.50	475	7	3.67E-04	30.2	

VMS Nuclide Identification Report V3.1 Generated 28-JUN-2006 05:39:35

```
Configuration     : RDND06$DKA100:[ALP117.SAMPLE]H571G1AA_270662119.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 21:19:26
Sample ID         : H571G1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP117               Detector geometry:
Elapsed live time: 0 08:20:05.00         Elapsed real time: 0 08:20:05.00   0.0%
Energy tolerance :   100.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

Total number of lines in spectrum	3	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	2	66.67%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-210	138.38D	1.28	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-246	8500.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-243	7370.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP117.SAMPLE]H571G1AA_270662119.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4874.89	271	282	270	265	0.30		
5311.42	334	340	4	4	0.00		
6363.84	475	482	11	11	0.00		

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H571M1AA

Detector: ALP119 1
Report Date: 28-Jun-06 06:26 AM
Acquire Date: 27-JUN-2006 21:19:39.21
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	2	0.002	5423.2	148.6	330	350
TH-229	369	0	0.738	4845.3	327.9	258	302
TH-230	3	0	0.006	4687.7	149.3	231	251
TH-232	2	0	0.004	4013.0	150.1	141	161

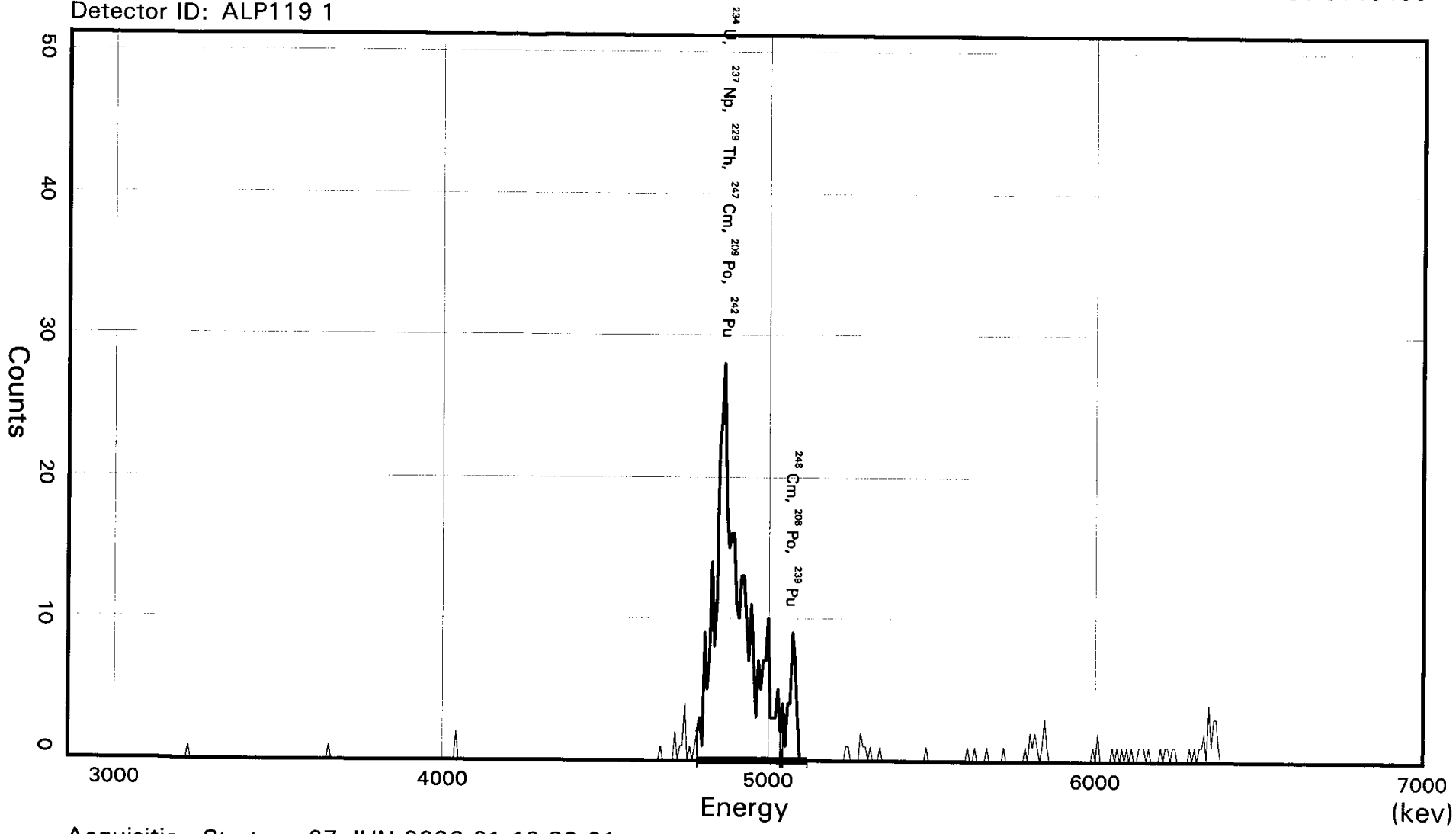
End of Alpha Region Report
(Produced by ANAL Report)

STL Richland WA.

TH BRC

Sample ID: H571M1AA
Detector ID: ALP119 1

Batch ID: 6146436



Acquisition Start: 27-JUN-2006 21:19:39.21
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:02.00

Energy Coefficients:
Offset: 2.83644E+03
Slope: 7.56232E+00
Quadrature: -1.97420E-04

SAMPLE IDENTIITY: H571M1AA

TITLE : TH BRC

DETECTOR : ALP119 1
CONFIGURATION NAME : RDND06$DKA100:[ALP119.SAMPLE]H571M1AA_270662
119.CNF;1
ACQUIRE DATE of BACKGROUND: 22-JUN-2006 10:15:44

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 21:19:39 CALIB DATE : 22-JUN-2006 09:30:26

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:02

OFFSET : 2836.44 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 7.56232 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.197420E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571M1AA

Detector: ALP119 1
Report Date: 28-Jun-06 05:39 AM
Acquire Date: 27-JUN-2006 21:19:39.21
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	30	0	0	0.060	5141.6	81.9	293	304	0.00	0.00	P
PO-209	341	0	0	0.682	4909.9	260.9	259	294	0.00	0.00	P
PO-210	-9999	-9999	0	-9.998	5331.1	260.0	321	356	0.00	0.00	M
AC-227	-9999	-9999	0	-9.998	6064.7	258.6	420	455	0.00	0.00	M
TH-227	-9999	-9999	0	-9.998	6064.7	258.6	420	455	0.00	0.00	M
TH-228	-9999	-9999	0	-9.998	5449.9	259.8	337	372	0.00	0.00	M
TH-229	341	0	0	0.682	4872.0	260.9	259	294	0.00	0.00	P
TH-230	-9999	-9999	0	-9.998	4714.4	261.2	238	273	0.00	0.00	I
TH-232	2	0	0	0.004	4039.7	262.4	148	183	0.00	0.00	S
U-232	-9999	-9999	0	-9.998	5346.8	260.0	323	358	0.00	0.00	M
U-234	341	0	0	0.682	4801.3	260.9	259	294	0.00	0.00	P
U-235	0	0	0	0.000	4424.5	261.7	199	234	0.00	0.00	S
PU-236	7	12	12	0.003	5794.3	259.1	383	418	0.00	0.00	S
NP-237	341	0	0	0.682	4814.7	260.9	259	294	0.00	0.00	P
PU-238	-9999	-9999	0	-9.998	5525.7	259.6	347	382	0.00	0.00	M
U-238	-9999	-9999	0	-9.998	4224.7	262.1	172	207	0.00	0.00	M
PU-239	30	0	0	0.060	5183.3	81.9	293	304	0.00	0.00	P
AM-241	-9999	-9999	0	-9.998	5512.3	259.7	345	380	0.00	0.00	M
AM-242M	-9999	-9999	0	-9.998	5233.5	260.2	308	343	0.00	0.00	M
CM-242	-9999	-9999	0	-9.998	6139.4	258.5	430	465	0.00	0.00	M
PU-242	341	0	0	0.682	4927.2	260.9	259	294	0.00	0.00	P
AM-243	-9999	-9999	0	-9.998	5302.0	260.1	317	352	0.00	0.00	M
CM-244	-9999	-9999	0	-9.998	5831.5	259.1	388	423	0.00	0.00	M
CM-246	-9999	-9999	0	-9.998	5413.2	259.9	332	367	0.00	0.00	M
CM-247	341	0	0	0.682	4897.1	260.9	259	294	0.00	0.00	P
CM-248	30	0	0	0.060	5105.3	81.9	293	304	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571M1AA
Detector: ALP119 1
Report Date: 28-Jun-06 05:39 AM
Acquire Date: 27-JUN-2006 21:19:39.21

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	1		51	0		101	0	+	151	0	@	201	0	+	251	0	@	301	0	@	351	1	@	401
		2	0		52	0		102	0	@	152	0	@	202	1	+	252	0	@	302	0	@	352	3	@	402
0		3	0		53	0		103	0	+	153	0	@	203	1	+	253	0	@	303	1	@	353	1	@	403
0		4	0		54	0		104	0	+	154	0	@	204	4	+	254	0		304	0	@	354	0	@	404
0		5	0		55	0		105	0	+	155	0	@	205	0	+	255	0		305	0	@	355	0	@	405
0		6	0		56	0		106	0	+	156	0	@	206	1	+	256	0		306	0	@	356	0	@	406
0		7	0		57	0		107	0	+	157	0	@	207	0	+	257	0		307	0	@	357	0	@	407
0		8	0		58	1		108	0	+	158	0	+	208	1	+	258	0	+	308	0	@	358	0	@	408
0		9	0		59	0		109	0	+	159	0	+	209	2	@	259	0	+	309	0	@	359	0	@	409
0		10	0		60	0		110	2	+	160	0	+	210	3	@	260	0	+	310	0	@	360	0	@	410
0		11	0		61	0		111	0	+	161	0	+	211	1	@	261	0	+	311	0	@	361	0	@	411
0		12	0		62	0		112	0	+	162	0	+	212	9	@	262	0	+	312	0	@	362	0	@	412
0		13	0		63	0		113	0	+	163	0	+	213	5	@	263	0	+	313	0	@	363	0	@	413
0		14	0		64	0		114	0	+	164	0	+	214	7	@	264	0	+	314	0	@	364	0	@	414
0		15	0		65	0		115	0	+	165	0	+	215	14	@	265	0	+	315	0	@	365	0	@	415
0		16	0		66	0		116	0	+	166	0	+	216	8	@	266	0	+	316	0	@	366	0	@	416
0		17	0		67	0		117	0	+	167	0	+	217	11	@	267	0	@	317	0	@	367	0	@	417
0		18	0		68	0		118	0	+	168	0	+	218	22	@	268	0	@	318	0	@	368	0	@	418
0		19	0		69	0		119	0	+	169	0	+	219	24	@	269	0	@	319	0	@	369	0	-	419
0		20	0		70	0		120	0	+	170	0	+	220	28	@	270	1	@	320	1	@	370	0	@	420
0		21	0		71	0		121	0	+	171	0	+	221	18	@	271	1	@	321	0	@	371	0	@	421
0		22	0		72	0		122	0	@	172	0	+	222	15	@	272	0	@	322	0	@	372	1	@	422
0		23	0		73	0		123	0	@	173	0	+	223	16	@	273	0	@	323	1	@	373	0	@	423
0		24	0		74	0		124	0	@	174	0	+	224	16	@	274	0	@	324	0	@	374	2	@	424
0		25	0		75	0		125	0	@	175	0	+	225	11	@	275	0	@	325	0	@	375	0	@	425
0		26	0		76	0		126	0	@	176	0	+	226	10	@	276	2	@	326	0	@	376	0	@	426
0		27	0		77	0		127	0	@	177	0	+	227	13	@	277	1	@	327	0	@	377	0	@	427
0		28	0		78	0		128	0	@	178	0	+	228	13	@	278	1	@	328	1	@	378	0	@	428
0		29	0		79	0		129	0	@	179	0	+	229	10	@	279	0	@	329	0	@	379	0	@	429
0		30	0		80	0		130	0	@	180	0	+	230	7	@	280	1	@	330	0	@	380	1	-	430
0		31	0		81	0		131	0	@	181	0	+	231	11	@	281	0	@	331	0	+	381	0	@	431
0		32	0		82	0		132	0	@	182	0	+	232	7	@	282	0	-	332	0	+	382	1	@	432
0		33	0		83	0		133	0	@	183	0	+	233	3	@	283	0	@	333	0	-	383	0	@	433
0		34	0		84	0		134	0	-	184	0	+	234	7	@	284	1	@	334	0	-	384	1	@	434
0		35	0		85	0		135	0	-	185	0		235	5	@	285	0	@	335	1	-	385	0	@	435
0		36	0		86	0		136	0	-	186	0		236	7	@	286	0	@	336	0	-	386	1	@	436
0		37	0		87	0		137	0	-	187	0		237	7	@	287	0	@	337	0	-	387	0	@	437
0		38	0		88	0		138	0	-	188	0	+	238	10	@	288	0	@	338	0	@	388	1	@	438
0		39	0		89	0		139	0	-	189	0	+	239	3	@	289	0	@	339	0	@	389	0	@	439
0		40	0		90	0		140	0	-	190	0	+	240	3	@	290	0	@	340	0	@	390	0	@	440
0		41	0		91	0		141	0	-	191	0	+	241	3	@	291	0	@	341	0	@	391	1	@	441
0		42	0		92	0		142	0	-	192	0	+	242	5	@	292	0	@	342	0	@	392	1	@	442
0		43	0		93	0		143	0	-	193	0	+	243	2	-	293	0	@	343	0	@	393	1	@	443
0		44	0		94	0		144	0	-	194	1	+	244	4	@	294	0	@	344	1	@	394	0	@	444
0		45	0		95	0		145	0	-	195	0	+	245	1	@	295	0	@	345	0	@	395	1	@	445
0		46	0		96	0		146	0	-	196	0	+	246	4	@	296	0	@	346	2	@	396	0	@	446
0		47	0		97	0		147	0	-	197	0	+	247	4	@	297	0	@	347	1	@	397	0	@	447
0		48	0		98	0	+	148	0	-	198	0	+	248	9	@	298	0	@	348	2	@	398	0	@	448
0		49	0		99	0	+	149	0	@	199	0	+	249	7	@	299	0	@	349	1	@	399	0	@	449
0		50	0		100	0	+	150	0	@	200	2	+	250	3	@	300	0	@	350	0	@	400	1	@	450

Cnt	F	Chn
0		501
0		502
0		503
0		504
0		505
0		506
0		507
0		508
0		509
0		510
0		511
0		512

VMS Peak Search Report V1.9 Generated 28-JUN-2006 05:39:43

```
Configuration     : RDND06$DKA100:[ALP119.SAMPLE]H571M1AA_270662119.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 21:19:39
Sample ID         : H571M1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP119               Detector geometry:
Elapsed live time: 0 08:20:02.00         Elapsed real time: 0 08:20:02.00   0.0%
Start energy      :  2859.13 kev         End energy       :  6656.60 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4871.97	341	0	75.62	271.09	259	35	1.14E-02	5.4	
2	0	5069.82	30	0	45.37	297.64	293	11	1.00E-03	18.3	

VMS Nuclide Identification Report V3.1 Generated 28-JUN-2006 05:39:45

```
Configuration     : RDND06$DKA100:[ALP119.SAMPLE]H571M1AA_270662119.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 21:19:39
Sample ID         : H571M1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP119               Detector geometry:
Elapsed live time: 0 08:20:02.00         Elapsed real time: 0 08:20:02.00   0.0%
Energy tolerance :   100.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    2      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-234	2.45E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-239	24110.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP119.SAMPLE]H571M1AA_270662119.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4871.97	259	294	341	340	0.05		
5069.82	293	304	30	34	-0.73	6	0.16

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H571N1AA

Detector: ALP120 1
Report Date: 28-Jun-06 06:27 AM
Acquire Date: 27-JUN-2006 21:19:51.62
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	3	4	0.002	5423.2	147.7	332	352
TH-229	375	1	0.749	4845.3	347.3	257	304
TH-230	7	1	0.013	4687.7	147.8	232	252
TH-232	1	0	0.002	4013.0	147.8	141	161

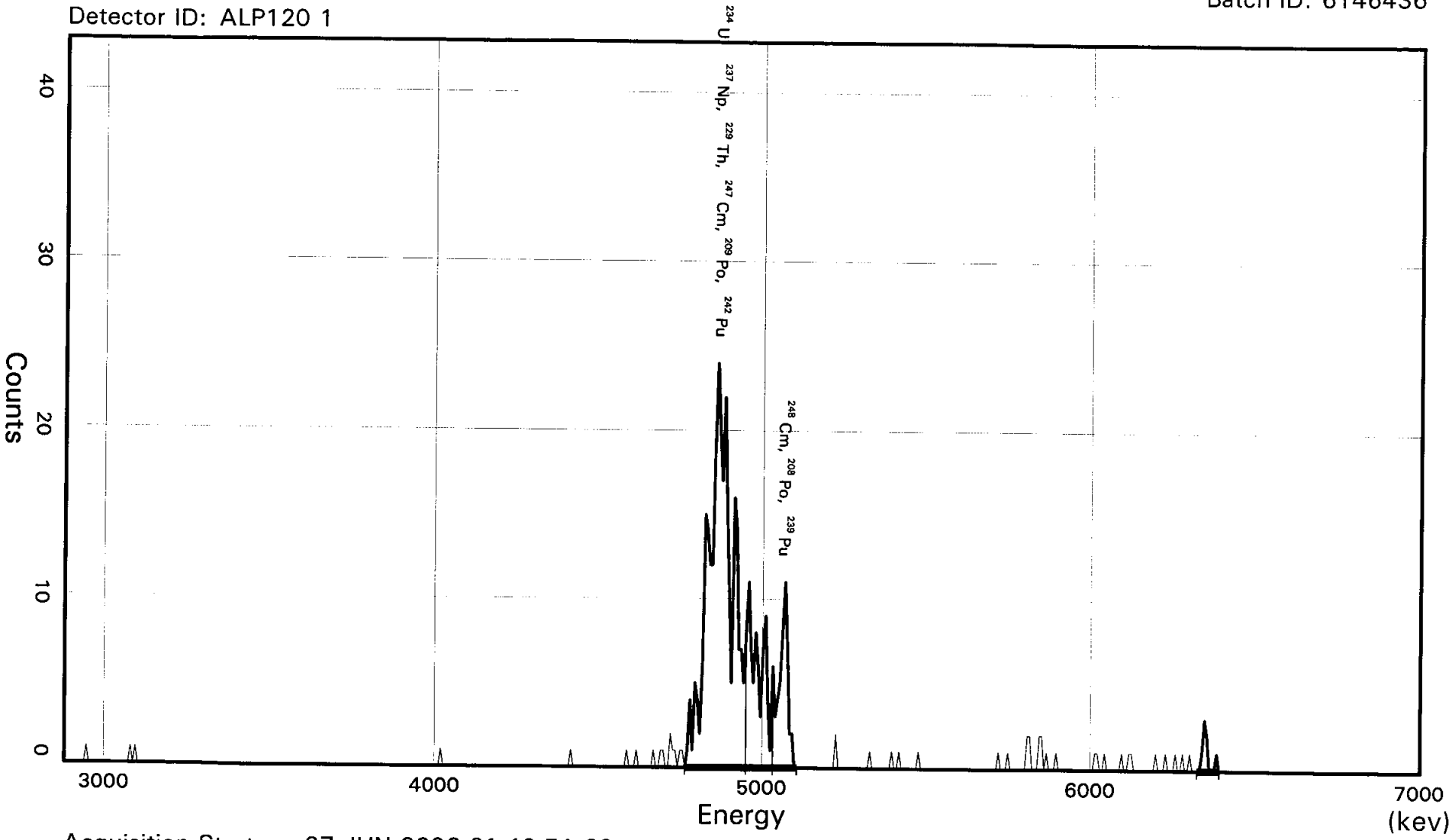
End of Alpha Region Report
(Produced by ANAL Report)

STL Richland WA.

TH BRC

Sample ID: H571N1AA
Detector ID: ALP120 1

Batch ID: 6146436



Acquisition Start: 27-JUN-2006 21:19:51.62
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:01.00

Energy Coefficients:
Offset: 2.85851E+03
Slope: 7.39562E+00
Quadrature: -1.24203E-05

SAMPLE IDENTITY: H571N1AA

TITLE : TH BRC

DETECTOR : ALP120 1
CONFIGURATION NAME : RDND06$DKA100:[ALP120.SAMPLE]H571N1AA_270662
119.CNF;1
ACQUIRE DATE of BACKGROUND: 22-JUN-2006 10:15:46

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 21:19:51 CALIB DATE : 22-JUN-2006 09:30:33

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:01

OFFSET : 2858.51 keV CONSTANT FWHM : 9.66667 Channels
SLOPE : 7.39562 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.124203E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571N1AA

Detector: ALP120 1
Report Date: 28-Jun-06 05:40 AM
Acquire Date: 27-JUN-2006 21:19:51.62
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	53	0	0	0.106	5138.1	155.2	283	304	0.00	0.00	P
PO-209	325	1	0	0.649	4906.4	266.0	258	294	0.00	0.00	P
PO-210	-9999	-9999	0	-9.999	5327.6	265.9	320	356	0.00	0.00	M
AC-227	-9999	-9999	0	-9.999	6061.3	265.9	419	455	0.00	0.00	M
TH-227	-9999	-9999	0	-9.999	6061.3	265.9	419	455	0.00	0.00	M
TH-228	-9999	-9999	0	-9.999	5446.4	265.9	336	372	0.00	0.00	M
TH-229	325	1	0	0.649	4868.5	266.0	258	294	0.00	0.00	P
TH-230	-9999	-9999	0	-9.999	4710.9	266.0	237	273	0.00	0.00	I
TH-232	1	0	0	0.002	4036.2	266.1	145	181	0.00	0.00	S
U-232	-9999	-9999	0	-9.999	5343.4	265.9	322	358	0.00	0.00	M
U-234	325	1	0	0.649	4797.8	266.0	258	294	0.00	0.00	P
U-235	1	1	0	0.001	4421.0	266.0	197	233	0.00	0.00	S
PU-236	7	17	11	-0.003	5790.9	265.9	383	419	0.00	0.00	S
NP-237	325	1	0	0.649	4811.2	266.0	258	294	0.00	0.00	P
PU-238	-9999	-9999	0	-9.999	5522.3	265.9	346	382	0.00	0.00	M
U-238	-9999	-9999	0	-9.999	4221.2	266.1	170	206	0.00	0.00	M
PU-239	53	0	0	0.106	5179.8	155.2	283	304	0.00	0.00	P
AM-241	-9999	-9999	0	-9.999	5508.8	265.9	345	381	0.00	0.00	M
AM-242M	-9999	-9999	0	-9.999	5230.0	266.0	307	343	0.00	0.00	M
CM-242	-9999	-9999	0	-9.999	6136.0	265.8	430	466	0.00	0.00	M
PU-242	325	1	0	0.649	4923.7	266.0	258	294	0.00	0.00	P
AM-243	-9999	-9999	0	-9.999	5298.5	265.9	316	352	0.00	0.00	M
CM-244	-9999	-9999	0	-9.999	5828.1	265.9	388	424	0.00	0.00	M
CM-246	-9999	-9999	0	-9.999	5409.7	265.9	331	367	0.00	0.00	M
CM-247	325	1	0	0.649	4893.6	266.0	258	294	0.00	0.00	P
CM-248	53	0	0	0.106	5101.8	155.2	283	304	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571N1AA
Detector: ALP120 1
Report Date: 28-Jun-06 05:40 AM
Acquire Date: 27-JUN-2006 21:19:51.62

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	@	201	0	+	251	2	@	301	0	@	351	0	@	401	0	@	451	0		501
		2	0		52	0		102	0	+	152	0	@	202	2	+	252	2	@	302	0	@	352	0	@	402	1	@	452	0		502
0		3	0		53	0		103	0	+	153	0	@	203	1	+	253	0	@	303	0	@	353	0	@	403	0	@	453	0		503
0		4	0		54	0		104	0	+	154	0	@	204	1	+	254	0		304	1	@	354	2	@	404	0	@	454	0		504
0		5	0		55	0		105	0	+	155	0	@	205	0	+	255	0		305	0	@	355	2	@	405	0	@	455	0		505
0		6	0		56	0		106	0	+	156	0	@	206	1	+	256	0		306	0	@	356	0	@	406	1	-	456	0		506
0		7	0		57	0		107	1	+	157	0	+	207	1	+	257	0	+	307	0	@	357	1	@	407	0	-	457	0		507
0		8	0		58	0		108	0	+	158	0	+	208	0	@	258	0	+	308	0	@	358	0	@	408	0	-	458	0		508
0		9	0		59	0		109	0	+	159	0	+	209	1	@	259	0	+	309	0	@	359	0	@	409	0	-	459	0		509
0		10	0		60	0		110	0	+	160	0	+	210	4	@	260	0	+	310	0	@	360	0	@	410	1	-	460	0		510
0		11	0		61	0		111	0	+	161	1	+	211	1	@	261	0	+	311	0	@	361	1	@	411	0	-	461	0		511
1		12	0		62	0		112	0	+	162	0	+	212	5	@	262	0	+	312	0	@	362	0	@	412	0	-	462	0		512
0		13	0		63	0		113	0	+	163	0	+	213	4	@	263	0	+	313	0	@	363	0	@	413	1	-	463			
0		14	0		64	0		114	0	+	164	0	+	214	2	@	264	0	+	314	0	@	364	0	@	414	0	-	464			
0		15	0		65	0		115	0	+	165	0	+	215	6	@	265	0	+	315	0	@	365	0	@	415	0	-	465			
0		16	0		66	0		116	0	+	166	0	+	216	15	@	266	0	@	316	0	@	366	0	@	416	1	-	466			
0		17	0		67	0		117	0	+	167	0	+	217	14	@	267	0	@	317	0	@	367	0	@	417	0		467			
0		18	0		68	0		118	0	+	168	0	+	218	12	@	268	0	@	318	0	@	368	0	@	418	0		468			
0		19	0		69	0		119	0	+	169	0	+	219	12	@	269	0	@	319	0	@	369	0	@	419	0		469			
0		20	0		70	0		120	0	@	170	0	+	220	19	@	270	2	@	320	0	@	370	0	@	420	0		470			
0		21	0		71	0		121	0	@	171	0	+	221	24	@	271	0	@	321	0	@	371	0	@	421	1		471			
0		22	0		72	0		122	0	@	172	0	+	222	20	@	272	0	@	322	0	@	372	0	@	422	3		472			
0		23	0		73	0		123	0	@	173	0	+	223	17	@	273	0	@	323	0	@	373	0	@	423	2		473			
0		24	0		74	0		124	0	@	174	0	+	224	22	@	274	0	@	324	0	@	374	0	@	424	0		474			
0		25	0		75	0		125	0	@	175	0	+	225	15	@	275	0	@	325	0	@	375	0	@	425	0		475			
0		26	0		76	0		126	0	@	176	0	+	226	10	@	276	0	@	326	0	@	376	0	@	426	0		476			
0		27	0		77	0		127	0	@	177	0	+	227	5	@	277	0	@	327	0	@	377	1	@	427	1		477			
0		28	0		78	0		128	0	@	178	0	+	228	16	@	278	0	@	328	0	@	378	1	@	428	0		478			
0		29	0		79	0		129	0	@	179	0	+	229	14	@	279	0	@	329	0	@	379	0	@	429	0		479			
1		30	0		80	0		130	0	@	180	0	+	230	7	@	280	0	@	330	0	@	380	0	-	430	0		480			
0		31	0		81	0		131	0	@	181	0	+	231	7	@	281	0	-	331	0	@	381	1	@	431	0		481			
1		32	0		82	0		132	0	-	182	0	+	232	5	@	282	0	@	332	0	+	382	0	@	432	0		482			
0		33	0		83	0		133	0	-	183	0	+	233	8	-	283	0	@	333	0	-	383	0	@	433	0		483			
0		34	0		84	0		134	0	-	184	1		234	11	@	284	1	@	334	0	-	384	0	@	434	0		484			
0		35	0		85	0		135	0	-	185	0		235	7	@	285	0	@	335	0	-	385	0	@	435	0		485			
0		36	0		86	0		136	0	-	186	0		236	5	@	286	0	@	336	0	-	386	0	@	436	0		486			
0		37	0		87	0		137	0	-	187	0	+	237	8	@	287	0	@	337	1	-	387	0	@	437	0		487			
0		38	0		88	0		138	0	-	188	1	+	238	6	@	288	0	@	338	0	@	388	1	@	438	0		488			
0		39	0		89	0		139	0	-	189	0	+	239	3	@	289	0	@	339	0	@	389	0	@	439	0		489			
0		40	0		90	0		140	0	-	190	0	+	240	7	@	290	0	@	340	0	@	390	0	@	440	0		490			
0		41	0		91	0		141	0	-	191	0	+	241	9	@	291	0	@	341	1	@	391	1	@	441	0		491			
0		42	0		92	0		142	0	-	192	0	+	242	4	@	292	0	@	342	0	@	392	1	@	442	0		492			
0		43	0		93	0		143	0	-	193	0	+	243	1	@	293	1	@	343	0	@	393	0	@	443	0		493			
0		44	0		94	0		144	0	-	194	0	+	244	6	@	294	0	@	344	0	@	394	0	@	444	0		494			
0		45	0		95	0	+	145	0	-	195	1	+	245	3	@	295	0	@	345	0	@	395	0	@	445	0		495			
0		46	0		96	0	+	146	0	-	196	0	+	246	4	@	296	1	@	346	0	@	396	0	@	446	0		496			
0		47	0		97	0	+	147	0	@	197	0	+	247	5	@	297	0	@	347	0	@	397	0	@	447	0		497			
0		48	0		98	0	+	148	0	@	198	1	+	248	8	@	298	0	@	348	0	@	398	0	@	448	0		498			
0		49	0		99	0	+	149	0	@	199	1	+	249	11	@	299	0	@	349	2	@	399	0	@	449	0		499			
0		50	0		100	0	+	150	0	@	200	0	+	250	7	@	300	0	@	350	2	@	400	0	@	450	0		500			

VMS Peak Search Report V1.9 Generated 28-JUN-2006 05:39:56

Configuration : RDND06$DKA100:[ALP120.SAMPLE]H571N1AA_270662119.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 21:19:51
Sample ID : H571N1AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP120 Detector geometry:
Elapsed live time: 0 08:20:01.00 Elapsed real time: 0 08:20:01.00 0.0%
Start energy : 2880.70 kev End energy : 6641.81 kev
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4868.54	325	0	81.35	271.91	258	36	1.08E-02	5.5	
2	0	5064.80	53	0	44.37	298.47	283	21	1.77E-03	13.7	
3	0	6350.17	6	0	44.37	472.50	469	9	2.00E-04	40.8	

VMS Nuclide Identification Report V3.1 Generated 28-JUN-2006 05:39:59

Configuration	: RDND06$DKA100:[ALP120.SAMPLE]H571N1AA_270662119.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.4		
Sample title	: TH BRC		
Sample date	: 10-MAY-2006 12:00:00	Acquisition date	: 27-JUN-2006 21:19:51
Sample ID	: H571N1AA	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP120	Detector geometry	:
Elapsed live time	: 0 08:20:01.00	Elapsed real time	: 0 08:20:01.00 0.0%
Energy tolerance	: 100.00 kev	Half life ratio	: 1.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Spline	Efficiencies at	: Peak Energy
Abundance limit	: 0.00		

Summary of Nuclide Activity

Total number of lines in spectrum	3	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	2	66.67%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-234	2.45E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-239	24110.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP120.SAMPLE]H571N1AA_270662119.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4868.54	258	294	325	332	-0.39		
5064.80	283	304	53	117	-8.79	75	0.21
6350.17	469	478	6	7	-0.41		

End of Report

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST

6/28/06
0758

C.R. Technician: OP
Date Counted: 6/27/06
C.R. Analyst: CP
Date Analyzed: 6/28/06

Counting Time
Sample: 500 Minutes
Background: See Alpha Analysis Report BRC 5/10/06

SOP's
Operating: RICHRD008
Review: RICHRD0016 6146436

WorkOrder #	Th-229 (4845 KeV) Tracer from Th-234 Beta Count (7)				TOTAL COUNTS			Det #	Comment
					Th-228 (5423 KeV)	Th-230 (4688 KeV)	Th-232 (4010 KeV)		
	ID	Activity	ROI Cts	BKG	(6)	(8)	(9)		
H571Q1AA		10		0	See Alpha Analysis Report for ROI Information			171	
H571R1AA		10		0	See Alpha Analysis Report for ROI Information			172	
H571T1AA		10		0	See Alpha Analysis Report for ROI Information			173	
H571V1AA		10		0	See Alpha Analysis Report for ROI Information			174	
H571X1AA		10		0	See Alpha Analysis Report for ROI Information			175	
H5710 1AA		10		0	See Alpha Analysis Report for ROI Information			176	
H5711 1AA		10		0	See Alpha Analysis Report for ROI Information			177	
H5712 1AA		10		0	See Alpha Analysis Report for ROI Information			178	
		10		0	See Alpha Analysis Report for ROI Information				

Comments:

Form No: RC-012, 10/02, Rev 9

Approved by: S

Date: 6/28/06

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H571Q1AA

Detector: ALP171 1
Report Date: 28-Jun-06 08:04 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	3	3	0.003	5423.2	116.3	316	336
TH-229	364	1	0.728	4845.3	343.2	217	276
TH-230	3	0	0.006	4687.7	116.3	190	210
TH-232	0	1	-0.001	4013.0	116.4	74	94

End of Alpha Region Report
(Produced by ANAL Report)

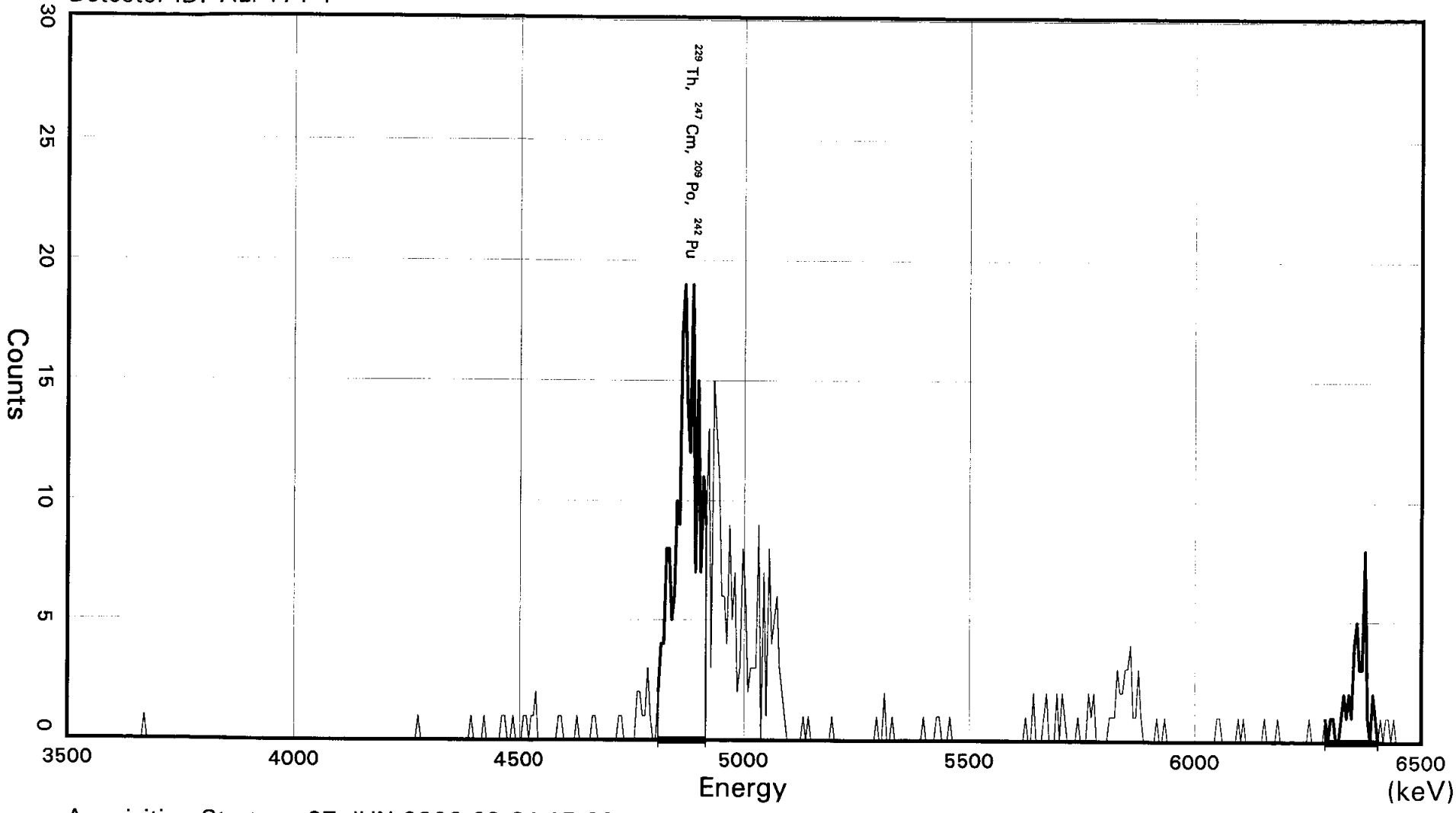
STL Richland WA.

TH BRC

Sample ID: H571Q1AA

Detector ID: ALP171 1

Batch ID: 6146436



Acquisition Start: 27-JUN-2006 23:34:15.00

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.49600E+03

Slope: 5.81791E+00

Quadrature: -1.51993E-06

SAMPLE IDENTIITY: H571Q1AA

TITLE : TH BRC

DETECTOR : ALP171 1
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H571Q1AA_270662334A.CN
F;1
ACQUIRE DATE of BACKGROUND: 10-JUN-2006 06:49:56

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 23:34:15 CALIB DATE : 09-JUN-2006 02:56:15

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3496.00 keV CONSTANT FWHM : 8.50000 Channels
SLOPE : 5.81791 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.151993E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571Q1AA

Detector: ALP171 1
Report Date: 28-Jun-06 07:54 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5151.6	104.7	272	290	0.00	0.00	M
PO-209	224	1	0	0.447	4919.9	104.7	226	244	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5341.1	104.7	305	323	0.00	0.00	M
AC-227	3	0	2	0.006	6074.7	104.7	431	449	0.00	0.00	S
TH-227	3	0	2	0.006	6074.7	104.7	431	449	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5459.9	104.7	325	343	0.00	0.00	M
TH-229	224	1	0	0.447	4882.0	104.7	226	244	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4724.4	104.7	199	217	0.00	0.00	M
TH-232	0	1	0	-0.001	4049.7	104.7	83	101	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5356.8	104.7	308	326	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4811.3	104.7	214	232	0.00	0.00	M I
U-235	4	1	0	0.007	4434.5	104.7	149	167	0.00	0.00	
PU-236	10	19	13	0.001	5804.3	104.7	385	403	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4824.7	104.7	216	234	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5535.7	104.7	338	356	0.00	0.00	M
U-238	0	0	0	0.000	4234.7	104.7	115	133	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5193.3	104.7	280	298	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5522.3	104.7	336	354	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5243.5	104.7	288	306	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6149.4	104.7	444	462	0.00	0.00	M
PU-242	224	1	0	0.447	4937.2	104.7	226	244	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5312.0	104.7	300	318	0.00	0.00	M
CM-244	22	30	13	0.014	5841.5	104.7	391	409	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5423.2	104.7	319	337	0.00	0.00	M
CM-247	224	1	0	0.447	4907.1	104.7	226	244	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5115.3	104.7	266	284	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571Q1AA
Detector: ALP171 1
Report Date: 28-Jun-06 07:54 AM
Acquire Date: 27-JUN-2006 23:34:15.00

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0	+	151	1	+	201	6		251	0	@	301	0	@	351	3	@	401	0	-	451	1		501
		2	0		52	0		102	0	+	152	1	+	202	4		252	0	@	302	0	@	352	2	@	402	0	-	452	0		502
0		3	0		53	0		103	0	+	153	0	+	203	9		253	0	@	303	0	@	353	2	@	403	0	-	453	1		503
0		4	0		54	0		104	1	+	154	0	+	204	5		254	0	@	304	0	@	354	3	-	404	0	-	454	1		504
0		5	0		55	0		105	0	+	155	0	+	205	7		255	0	@	305	0	+	355	3	-	405	0	-	455	0		505
0		6	0		56	0		106	0	+	156	0	+	206	2		256	0	@	306	0	+	356	4	-	406	0	-	456	1		506
0		7	0		57	0		107	0	+	157	0	+	207	3		257	0	@	307	0		357	1	-	407	1	-	457	0		507
0		8	0		58	0		108	0	+	158	0	+	208	8		258	0	@	308	0		358	1	-	408	0	-	458	0		508
0		9	0		59	0		109	1	+	159	0	+	209	6		259	1	@	309	0		359	3	-	409	0	-	459	0		509
0		10	0		60	0		110	0	+	160	0	+	210	2		260	0	@	310	0		360	1		410	0	-	460	0		510
0		11	0		61	0		111	0	+	161	1	+	211	3		261	0	@	311	0		361	0		411	0	-	461	0		511
0		12	0		62	0		112	0	+	162	1	+	212	3		262	2	@	312	0		362	0		412	1	-	462	0		512
0		13	0		63	0		113	0	+	163	0	+	213	3		263	0	@	313	0		363	0		413	0		463			
0		14	0		64	0		114	0	+	164	0	@	214	9		264	0	@	314	0		364	0		414	0		464			
0		15	0		65	0	+	115	0	+	165	0	@	215	0		265	1	@	315	0		365	0		415	0		465			
0		16	0		66	0	+	116	1	+	166	0	-	216	7	+	266	0	@	316	1		366	1		416	0		466			
0		17	0		67	0	+	117	1	+	167	0	@	217	1	+	267	0	@	317	0		367	0		417	0		467			
0		18	0		68	0	+	118	0		168	2	@	218	8	+	268	0	@	318	0		368	0		418	0		468			
0		19	0		69	0	+	119	0		169	2	@	219	4	+	269	0	+	319	2		369	1		419	0		469			
0		20	0		70	0	+	120	1		170	1	@	220	5	+	270	0	@	320	0		370	0		420	0		470			
0		21	0		71	0	+	121	0		171	1	@	221	6	+	271	0	@	321	0		371	0		421	0		471			
0		22	0		72	0	+	122	0		172	3	@	222	3	@	272	0	@	322	0		372	0		422	0		472			
0		23	0		73	0	+	123	0		173	1	@	223	2	@	273	0	@	323	1		373	0		423	0		473			
0		24	0		74	0	+	124	1		174	0	@	224	1	@	274	0	@	324	2		374	0		424	1		474			
0		25	0		75	0	+	125	1		175	0	@	225	0	@	275	0	@	325	0		375	0		425	0		475			
0		26	0		76	0	+	126	0		176	2	@	226	0	@	276	0	@	326	0		376	0		426	0		476			
0		27	0		77	0	+	127	1		177	4	@	227	0	@	277	1	@	327	0		377	0		427	0		477			
0		28	0		78	0	+	128	1		178	4	@	228	0	@	278	0	@	328	2		378	0		428	0		478			
0		29	0		79	0	+	129	2		179	8	@	229	0	@	279	0	@	329	0		379	0		429	0		479			
1		30	0		80	0	+	130	0		180	8	@	230	0	@	280	0	@	330	2		380	0		430	1		480			
0		31	0		81	0	+	131	0		181	5	@	231	1	@	281	0	@	331	1		381	0	@	431	0		481			
0		32	0		82	0	+	132	0		182	6	@	232	0	@	282	1	@	332	0		382	0	@	432	1		482			
0		33	0	+	83	0	+	133	0		183	10	@	233	1	@	283	1	@	333	0		383	0	@	433	1		483			
0		34	0	+	84	1		134	0		184	9	@	234	0	@	284	0	@	334	0		384	0	@	434	0		484			
0		35	0	+	85	0		135	0		185	17	@	235	0	@	285	0	@	335	0	+	385	0	@	435	0		485			
0		36	0	+	86	0		136	0		186	19	@	236	0	@	286	0	@	336	1	+	386	0	@	436	1		486			
0		37	0	+	87	0		137	0		187	14	@	237	0	@	287	1	@	337	0	+	387	0	@	437	2		487			
0		38	0	+	88	0		138	1		188	12	@	238	0	-	288	0	@	338	0	+	388	0	@	438	1		488			
0		39	0	+	89	0		139	1		189	19	@	239	0	@	289	0	@	339	0	+	389	1	@	439	2		489			
0		40	0	+	90	0		140	0		190	7	@	240	0	@	290	0	@	340	2	+	390	1	@	440	1		490			
0		41	0	+	91	0		141	0		191	15	@	241	0	@	291	0	@	341	1	@	391	0	@	441	4		491			
0		42	0	+	92	0		142	0		192	7	@	242	1	@	292	0	@	342	2	@	392	0	@	442	5		492			
0		43	0	+	93	0		143	0		193	11	@	243	0	@	293	0	@	343	0	@	393	0	@	443	3		493			
0		44	0	+	94	0		144	0		194	9		244	0	@	294	0	@	344	0	@	394	0	-	444	3		494			
0		45	0	+	95	0		145	1		195	13		245	0	@	295	0	@	345	0	@	395	0	@	445	8		495			
0		46	0	+	96	0		146	0		196	3		246	0	@	296	0	@	346	0	@	396	0	@	446	1		496			
0		47	0	+	97	0		147	0		197	15		247	0	@	297	0	@	347	0	@	397	1	@	447	0		497			
0		48	0	+	98	0		148	0		198	13		248	0	@	298	0	@	348	1	@	398	0	@	448	2		498			
0		49	0	+	99	0	+	149	0	+	199	11		249	0	-	299	0	@	349	1	@	399	1	@	449	1		499			
0		50	0	+	100	0	+	150	0	+	200	6		250	0	@	300	0	@	350	1	@	400	0	-	450	0		500			

VMS Peak Search Report V1.9 Generated 28-JUN-2006 07:54:48

```
Configuration     : $DISK1:[ALP171.SAMPLE]H571Q1AA_270662334A.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID         : H571Q1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Start energy      :  3513.45 keV         End energy       :  6474.37 keV
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4881.98	224	0	69.81	238.24	226	18	7.47E-03	6.7	
2	0	6363.86	38	0	40.73	493.00	480	20	1.27E-03	16.2	

VMS Nuclide Identification Report V3.0 Generated 28-JUN-2006 07:54:52

```
Configuration     : $DISK1:[ALP171.SAMPLE]H571Q1AA_270662334A.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID         : H571Q1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                  2
 Number of unidentified lines                       1
 Number of lines tentatively identified by NID      1        50.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H571Q1AA_270662334A.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4881.97	226	244	224	186	2.54		
6363.85	480	500	38	37	0.16		

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

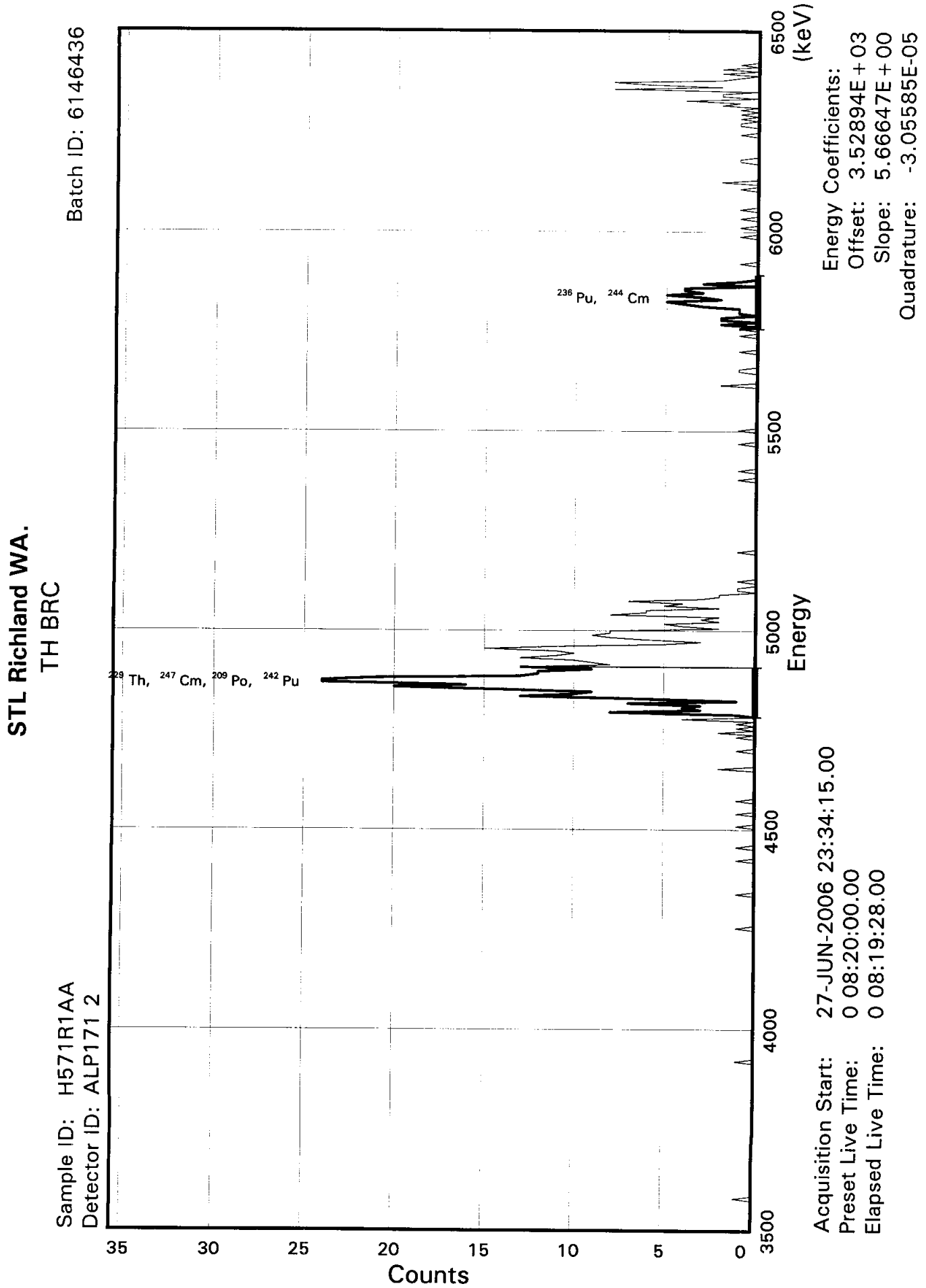
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H571R1AA

Detector: ALP171 2
Report Date: 28-Jun-06 08:05 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	4	0.000	5423.2	112.9	320	340
TH-229	459	5	0.914	4845.3	367.3	218	283
TH-230	3	1	0.005	4687.7	113.1	190	210
TH-232	0	0	0.000	4013.0	113.2	70	90

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6146436
Sample ID: H571R1AA
Detector ID: ALP171 2
229 Th, 247 Cm, 209 Po, 242 Pu
236 Pu, 244 Cm
Counts
35
30
25
20
15
10
5
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 27-JUN-2006 23:34:15.00
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.52894E+03
Slope: 5.66647E+00
Quadrature: -3.05585E-05

SAMPLE IDENTIITY: H571R1AA

TITLE : TH BRC

DETECTOR : ALP171 2
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H571R1AA_270662334B.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 23:34:15 CALIB DATE : 09-JUN-2006 02:56:29

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3528.94 keV CONSTANT FWHM : 10.00000 Channels
SLOPE : 5.66647 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.305585E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571R1AA

Detector: ALP171 2
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5140.1	124.3	270	292	0.00	0.00	M
PO-209	290	2	0	0.579	4908.4	124.3	222	244	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5329.6	124.2	303	325	0.00	0.00	M
AC-227	4	0	1	0.007	6063.2	124.1	433	455	0.00	0.00	S
TH-227	4	0	1	0.007	6063.2	124.1	433	455	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5448.4	124.2	324	346	0.00	0.00	M
TH-229	290	2	0	0.579	4870.5	124.3	222	244	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4712.9	124.4	194	216	0.00	0.00	M
TH-232	0	2	0	-0.002	4038.2	124.5	75	97	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5345.4	124.2	306	328	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4799.8	124.4	209	231	0.00	0.00	M I
U-235	3	0	0	0.006	4423.0	124.5	143	165	0.00	0.00	
PU-236	47	39	0	0.055	5792.9	135.4	394	418	0.00	0.00	P
NP-237	-9999	-9999	0	-10.010	4813.2	124.4	212	234	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5524.3	124.2	338	360	0.00	0.00	M
U-238	1	0	0	0.002	4223.2	124.5	108	130	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5181.8	124.3	277	299	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5510.8	124.2	335	357	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5232.0	124.3	286	308	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6138.0	129.7	446	469	0.00	0.00	M
PU-242	290	2	0	0.579	4925.7	124.3	222	244	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5300.5	124.2	298	320	0.00	0.00	M
CM-244	47	39	0	0.055	5830.1	135.4	394	418	0.00	0.00	P
CM-246	-9999	-9999	0	-10.010	5411.7	124.2	318	340	0.00	0.00	M
CM-247	290	2	0	0.579	4895.6	124.3	222	244	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5103.8	124.3	263	285	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571R1AA
Detector: ALP171 2
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00

Flags Key
Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	+	201	11		251	0	@	301	0	@	351	1	@	401	0	@	451	2		501
		2	0		52	0		102	0	+	152	0	+	202	15		252	0	@	302	0	@	352	1	@	402	0	@	452	6		502
0		3	0		53	0		103	0	+	153	0	+	203	11		253	0	@	303	0	@	353	1	@	403	0	@	453	8		503
0		4	0		54	0		104	0	+	154	0	+	204	5		254	0	@	304	0	@	354	3	@	404	0	@	454	2		504
0		5	0		55	0		105	0	+	155	0	+	205	3		255	0	@	305	0	@	355	4	@	405	0	@	455	1		505
0		6	0		56	0		106	0	+	156	0	+	206	6		256	0	@	306	0	@	356	5	@	406	1	-	456	0		506
0		7	0		57	0		107	0	+	157	1	+	207	8		257	0	@	307	0	@	357	2	@	407	0	-	457	2		507
0		8	0		58	0	+	108	1	+	158	0	+	208	9		258	0	@	308	0	+	358	3	@	408	0	-	458	0		508
1		9	0		59	0	+	109	0	+	159	0	@	209	8		259	0	@	309	0	+	359	5	@	409	2	-	459	2		509
0		10	0		60	0	+	110	0	+	160	0	@	210	8		260	0	@	310	0	+	360	3	@	410	0	-	460	0		510
0		11	0		61	0	+	111	0	+	161	0	@	211	2		261	0	@	311	0		361	4	@	411	0	-	461	1		511
0		12	0		62	0	+	112	0	+	162	0	-	212	4		262	0	@	312	0		362	4	@	412	0	-	462	0		512
0		13	0		63	0	+	113	0	+	163	1	@	213	5	+	263	0	@	313	0		363	0	@	413	0	-	463			
0		14	0		64	0	+	114	1	+	164	0	@	214	2	+	264	0	@	314	0		364	3	@	414	0	-	464			
0		15	0		65	0	+	115	0	+	165	2	@	215	3	+	265	0	@	315	0		365	1	@	415	0	-	465			
0		16	0		66	0	+	116	0		166	0	@	216	2	+	266	0	@	316	0		366	0	@	416	0	-	466			
0		17	0		67	0	+	117	0		167	1	@	217	8	+	267	0	@	317	0		367	0	@	417	0	-	467			
0		18	0		68	0	+	118	0		168	0	@	218	6	+	268	0	-	318	0		368	0		418	1	-	468			
0		19	1		69	0	+	119	0		169	1	@	219	6	+	269	0	@	319	2		369	0		419	1	-	469			
0		20	0		70	0	+	120	0		170	0	@	220	2	@	270	0	@	320	0		370	0		420	0		470			
0		21	0		71	0	+	121	0		171	4	@	221	5	@	271	0	@	321	0		371	0		421	0		471			
0		22	0		72	0	+	122	0		172	0	@	222	4	@	272	0	@	322	0		372	0		422	0		472			
0		23	0		73	0	+	123	1		173	1	@	223	7	@	273	0	@	323	0		373	1		423	0		473			
0		24	0		74	0	+	124	0		174	8	@	224	3	@	274	0	@	324	0		374	0		424	0		474			
0		25	0	+	75	0	+	125	0		175	3	@	225	2	@	275	0	@	325	1		375	0		425	0		475			
0		26	0	+	76	0	+	126	0		176	4	@	226	2	@	276	0	@	326	1		376	0		426	0		476			
0		27	0	+	77	0	+	127	0		177	3	@	227	0	@	277	1	@	327	0		377	0		427	0		477			
0		28	0	+	78	1	+	128	0		178	7	@	228	1	@	278	0	@	328	0		378	0		428	0		478			
0		29	0	+	79	0	+	129	1		179	1	@	229	1	@	279	0	@	329	0		379	0		429	0		479			
0		30	0	+	80	0	+	130	0		180	6	@	230	0	@	280	0	@	330	0		380	0		430	1		480			
0		31	0	+	81	0		131	0		181	13	@	231	0	@	281	1	@	331	0		381	0		431	0		481			
0		32	0	+	82	0		132	0		182	10	@	232	1	@	282	0	@	332	0		382	0		432	0		482			
0		33	0	+	83	0		133	0		183	9	@	233	0	@	283	0	@	333	0		383	0	@	433	0		483			
0		34	0	+	84	0		134	0		184	14	@	234	0	@	284	0	@	334	1		384	0	@	434	1		484			
0		35	0	+	85	0		135	1		185	20	@	235	0	@	285	0	@	335	0		385	1	@	435	1		485			
0		36	0	+	86	0		136	0		186	16	@	236	0	+	286	0	@	336	0		386	0	@	436	0		486			
0		37	0	+	87	0		137	0		187	24	@	237	0	@	287	0	@	337	0		387	0	@	437	1		487			
0		38	0	+	88	0		138	0		188	24	@	238	0	@	288	0	@	338	0		388	0	@	438	0		488			
0		39	0	+	89	0		139	0		189	21	@	239	0	@	289	0	@	339	0		389	1	@	439	1		489			
0		40	0	+	90	0		140	0		190	13	@	240	0	@	290	0	@	340	0		390	0	@	440	0		490			
0		41	0	+	91	0		141	0		191	12	@	241	0	@	291	0	@	341	1		391	0	@	441	1		491			
0		42	0	+	92	0		142	0		192	12	@	242	0	@	292	0	@	342	0		392	0	@	442	0		492			
0		43	0	+	93	1	+	143	0		193	9	@	243	0	@	293	1	@	343	0		393	1	@	443	2		493			
0		44	0	+	94	0	+	144	0	+	194	13		244	0	@	294	0	@	344	1	@	394	0	@	444	1		494			
0		45	0	+	95	0	+	145	0	+	195	8		245	1	@	295	0	@	345	0	@	395	0	@	445	4		495			
0		46	0	+	96	0	+	146	0	+	196	9		246	0	@	296	0	@	346	2	@	396	0	-	446	0		496			
0		47	0	+	97	0	+	147	0	+	197	10		247	0	@	297	0	@	347	0	@	397	1	@	447	2		497			
0		48	0		98	0	+	148	0	+	198	13		248	0	-	298	0	@	348	2	@	398	0	@	448	2		498			
0		49	0		99	0	+	149	2	+	199	11		249	0	@	299	1	@	349	2	@	399	0	@	449	0		499			
0		50	0		100	0	+	150	0	+	200	10		250	0	@	300	0	@	350	0	@	400	0	@	450	8		500			

VMS Peak Search Report V1.9 Generated 28-JUN-2006 07:54:56

```
Configuration     : $DISK1:[ALP171.SAMPLE]H571R1AA_270662334B.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID         : H571R1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Start energy      :  3545.94 keV         End energy       :  6422.16 keV
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4870.54	290	0	51.00	237.06	222	22	9.68E-03	5.9	
2	0	5834.28	47	0	56.66	407.74	394	24	1.57E-03	14.6	

VMS Nuclide Identification Report V3.0 Generated 28-JUN-2006 07:54:59

```
Configuration     : $DISK1:[ALP171.SAMPLE]H571R1AA_270662334B.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID         : H571R1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    2      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-236	2.86Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-244	18.10Y	1.01	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

```
   Grand Total Activity :  0.000E+00    0.000E+00
```

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H571R1AA_270662334B.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4870.53	222	244	290	243	2.76		
5834.27	394	418	47	47	0.00		

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H571T1AA

Detector: ALP171 3
Report Date: 28-Jun-06 08:05 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	1	1	0.001	5423.2	119.4	309	329
TH-229	226	0	0.452	4845.3	351.9	212	271
TH-230	4	1	0.007	4687.7	119.2	185	205
TH-232	1	1	0.001	4013.0	119.0	72	92

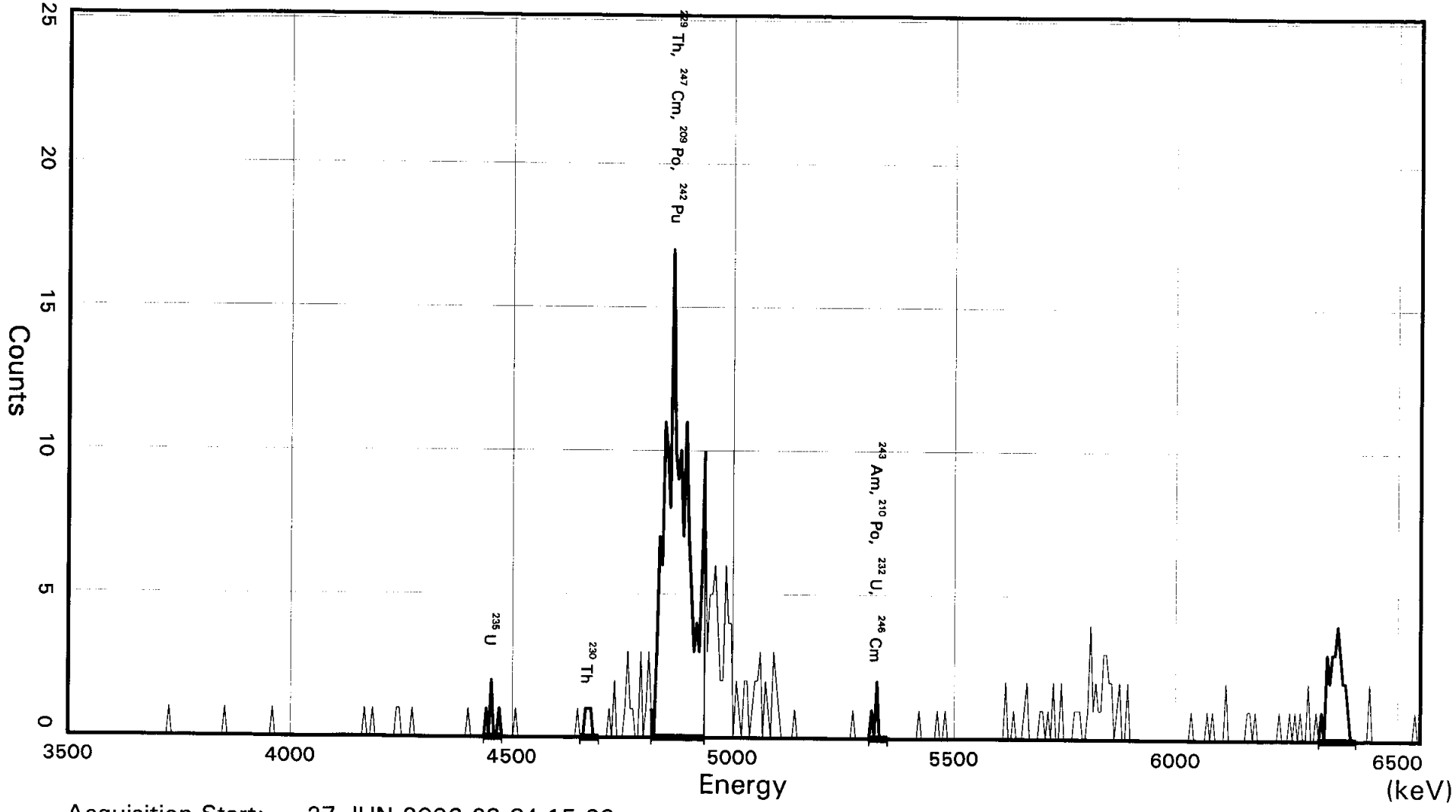
End of Alpha Region Report
(Produced by ANAL Report)

STL Richland WA.

TH BRC

Sample ID: H571T1AA
Detector ID: ALP171 3

Batch ID: 6146436



Acquisition Start: 27-JUN-2006 23:34:15.00
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:
Offset: 3.49562E+03
Slope: 5.94301E+00
Quadrature: 4.47075E-05

SAMPLE IDENTIITY: H571T1AA

TITLE : TH BRC

DETECTOR : ALP171 3
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H571T1AA_270662334C.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 23:34:15 CALIB DATE : 09-JUN-2006 02:56:42

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3495.62 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 5.94301 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 4.470750E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571T1AA

Detector: ALP171 3
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5139.5	119.4	267	287	0.00	0.00	M
PO-209	133	0	0	0.266	4907.8	119.3	222	242	0.00	0.00	P
PO-210	4	2	0	0.006	5329.0	41.8	304	311	0.00	0.00	P
AC-227	4	1	3	0.007	6062.6	119.6	422	442	0.00	0.00	S
TH-227	4	1	3	0.007	6062.6	119.6	422	442	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5447.8	119.4	319	339	0.00	0.00	M
TH-229	133	0	0	0.266	4869.9	119.3	222	242	0.00	0.00	P
TH-230	4	1	0	0.007	4712.3	41.7	195	202	0.00	0.00	P
TH-232	0	0	0	0.000	4037.6	119.0	82	102	0.00	0.00	
U-232	4	2	0	0.006	5344.8	41.8	304	311	0.00	0.00	P
U-234	-9999	-9999	0	-10.010	4799.2	119.3	210	230	0.00	0.00	S I
U-235	4	0	0	0.008	4422.4	41.7	158	165	0.00	0.00	P
PU-236	14	18	22	0.011	5792.3	113.6	377	396	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4812.6	119.3	212	232	0.00	0.00	S I
PU-238	-9999	-9999	0	-10.010	5523.7	119.5	332	352	0.00	0.00	M
U-238	5	0	0	0.010	4222.6	119.1	113	133	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5181.2	119.4	274	294	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5510.2	119.5	329	349	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5231.4	119.4	283	303	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6137.3	119.7	434	454	0.00	0.00	M
PU-242	133	0	0	0.266	4925.1	119.3	222	242	0.00	0.00	P
AM-243	4	2	0	0.006	5299.9	41.8	304	311	0.00	0.00	P
CM-244	16	20	22	0.013	5829.4	119.6	383	403	0.00	0.00	S
CM-246	4	2	0	0.006	5411.1	41.8	304	311	0.00	0.00	P
CM-247	133	0	0	0.266	4895.0	119.3	222	242	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5103.2	119.3	261	281	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571T1AA
Detector: ALP171 3
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0		151	0	+	201	4		251	0	-	301	0	+	351	0	-	401	0	-	451	0		501
		2	0		52	0	+	102	1		152	0		202	4		252	0	-	302	0	+	352	2	-	402	0	-	452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	0	-	303	0		353	0	-	403	0	-	453	0		503
0		4	0		54	0		104	0		154	0		204	2		254	0	@	304	0		354	0		404	0	-	454	0		504
0		5	0		55	0		105	0		155	0		205	1		255	1	@	305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	1		206	0		256	0	@	306	2		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	2		257	2	@	307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0	+	158	2		208	2		258	0	@	308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	1	+	159	0		209	0		259	0	@	309	1		359	0		409	1		459	0		509
0		10	1		60	0		110	0	+	160	0	+	210	1		260	0	@	310	0		360	0		410	0		460	1		510
0		11	0		61	0		111	2	+	161	0	+	211	2	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0	+	162	1	@	212	2	+	262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	1	+	113	0	+	163	3	@	213	3	+	263	0		313	1		363	0		413	1		463			
0		14	0		64	0	+	114	1	+	164	1	@	214	0	+	264	0		314	2		364	0		414	0		464			
0		15	0		65	0	+	115	0		165	1	@	215	2	+	265	0		315	0		365	0		415	1		465			
0		16	0		66	1	+	116	0		166	0	@	216	1	+	266	0		316	0		366	0		416	0		466			
0		17	0		67	0	+	117	0		167	0	@	217	0	@	267	0		317	0		367	0		417	1		467			
0		18	0		68	0	+	118	0		168	3	@	218	3	@	268	0		318	0		368	0		418	0		468			
0		19	0		69	0	+	119	0		169	0	@	219	2	@	269	0	+	319	1		369	0		419	0		469			
0		20	0		70	0	+	120	1		170	1	@	220	1	@	270	0	+	320	1		370	0		420	2		470			
0		21	0		71	0	+	121	0		171	3	@	221	0	@	271	0	+	321	0		371	0		421	0		471			
0		22	0		72	0	+	122	0		172	1	@	222	0	@	272	0	+	322	1		372	0	@	422	0		472			
0		23	0		73	0	+	123	0		173	0	@	223	0	@	273	1	+	323	0		373	0	@	423	1		473			
0		24	0		74	0	+	124	0		174	3	@	224	0	@	274	0	+	324	2		374	0	@	424	0		474			
0		25	0		75	1	+	125	0		175	7	@	225	0	@	275	0	+	325	0		375	0	@	425	1		475			
0		26	0		76	1	+	126	0		176	6	@	226	1	@	276	0	+	326	0		376	1	@	426	0		476			
0		27	0		77	0	+	127	0		177	11	@	227	0	@	277	0	+	327	2	+	377	0	@	427	3		477			
0		28	1		78	0	+	128	0		178	10	@	228	0	@	278	0	+	328	0	+	378	0	@	428	2		478			
0		29	0		79	0	+	129	0		179	8	@	229	0	@	279	0	@	329	0	+	379	0	@	429	3		479			
0		30	0		80	0	+	130	0		180	17	@	230	0	@	280	1	@	330	0	+	380	0	@	430	3		480			
0		31	0		81	1	+	131	0		181	10	@	231	0	@	281	0	@	331	0	+	381	0	@	431	4		481			
0		32	0	+	82	0	+	132	0		182	9	@	232	0	@	282	0	@	332	1	+	382	1	@	432	3		482			
0		33	0	+	83	0	+	133	0		183	10	@	233	0	-	283	1	@	333	1	@	383	0	@	433	2		483			
0		34	0	+	84	0		134	0		184	7	@	234	0	@	284	0	@	334	1	@	384	1	-	434	2		484			
0		35	0	+	85	0		135	0		185	11	@	235	0	@	285	0	@	335	0	@	385	0	@	435	1		485			
0		36	0	+	86	0		136	0		186	7	@	236	0	@	286	0	@	336	0	@	386	0	@	436	0		486			
0		37	0	+	87	0		137	0		187	5	@	237	0	@	287	0	@	337	1	@	387	0	@	437	0		487			
0		38	0	+	88	0		138	0		188	3	@	238	0	@	288	0	@	338	4	@	388	0	@	438	0		488			
1		39	0	+	89	0		139	0		189	4	@	239	0	@	289	0	@	339	1	@	389	2	@	439	0		489			
0		40	0	+	90	0		140	0		190	3	@	240	0	@	290	0	@	340	2	@	390	0	@	440	0		490			
0		41	0	+	91	0		141	0		191	6	@	241	0	@	291	0	@	341	1	@	391	0	@	441	0		491			
0		42	0	+	92	0		142	0		192	10		242	0	@	292	0	@	342	1	@	392	0	@	442	0		492			
0		43	0	+	93	0		143	0		193	3		243	0	@	293	0	@	343	3	@	393	0	-	443	2		493			
0		44	0	+	94	0		144	1		194	5		244	0	@	294	0	@	344	3	@	394	0	-	444	0		494			
0		45	0	+	95	0		145	0	+	195	5		245	0	-	295	0	@	345	2	@	395	0	-	445	0		495			
0		46	0	+	96	0		146	0	+	196	6		246	0	-	296	0	@	346	2	@	396	0	-	446	0		496			
0		47	0	+	97	0		147	1	+	197	4		247	0	-	297	0	@	347	0	-	397	1	-	447	0		497			
0		48	0	+	98	0		148	1	+	198	2		248	1	-	298	0	@	348	1	-	398	1	-	448	0		498			
0		49	0	+	99	0		149	1	+	199	2		249	0	-	299	0	@	349	2	-	399	0	-	449	0		499			
0		50	0	+	100	0		150	0	+	200	6		250	0	-	300	0	+	350	0	-	400	1	-	450	0		500			

VMS Peak Search Report V1.9 Generated 28-JUN-2006 07:55:05

Configuration : $DISK1:[ALP171.SAMPLE]H571T1AA_270662334C.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID : H571T1AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3513.45 keV End energy : 6550.16 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4450.62	4	0	23.77	160.50	158	7	1.33E-04	50.0	
2	0	4671.11	4	0	23.77	197.50	195	7	1.33E-04	50.0	
3	0	4869.93	133	0	65.37	230.85	222	20	4.44E-03	8.7	
4	0	5321.35	4	0	23.77	306.50	304	7	1.33E-04	50.0	
5	0	6361.56	23	0	47.54	480.50	474	14	7.67E-04	20.9	

VMS Nuclide Identification Report V3.0 Generated 28-JUN-2006 07:55:08

Configuration	: $DISK1:[ALP171.SAMPLE]H571T1AA_270662334C.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.3		
Sample title	: TH BRC		
Sample date	: 10-MAY-2006 12:00:00	Acquisition date	: 27-JUN-2006 23:34:15
Sample ID	: H571T1AA	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP171 1	Detector geometry	:
Elapsed live time	: 0 08:19:28.00	Elapsed real time	: 0 08:19:28.00 0.0%
Energy tolerance	: 80.00 keV	Half life ratio	: 1.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Spline	Efficiencies at	: Peak Energy
Abundance limit	: 70.00		

Summary of Nuclide Activity

Total number of lines in spectrum	5	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	4	80.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-210	138.38D	1.28	0.000E+00	0.000E+00	0.000E+00	0.00	
TH-230	7.54E+04Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-235	7.08E+08Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-246	8500.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-243	7370.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H571T1AA_270662334C.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4450.62	158	165	4	4	0.00		
4671.10	195	202	4	3	0.50		
4869.92	222	242	133	148	-1.30		
5321.34	304	311	4	3	0.50		
6361.55	474	488	23	24	-0.21		

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H571V1AA

Detector: ALP171 4
Report Date: 28-Jun-06 08:05 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	1	0.003	5423.2	111.3	307	327
TH-229	428	1	0.856	4845.3	377.7	203	271
TH-230	5	0	0.010	4687.7	110.9	175	195
TH-232	0	1	-0.001	4013.0	110.6	53	73

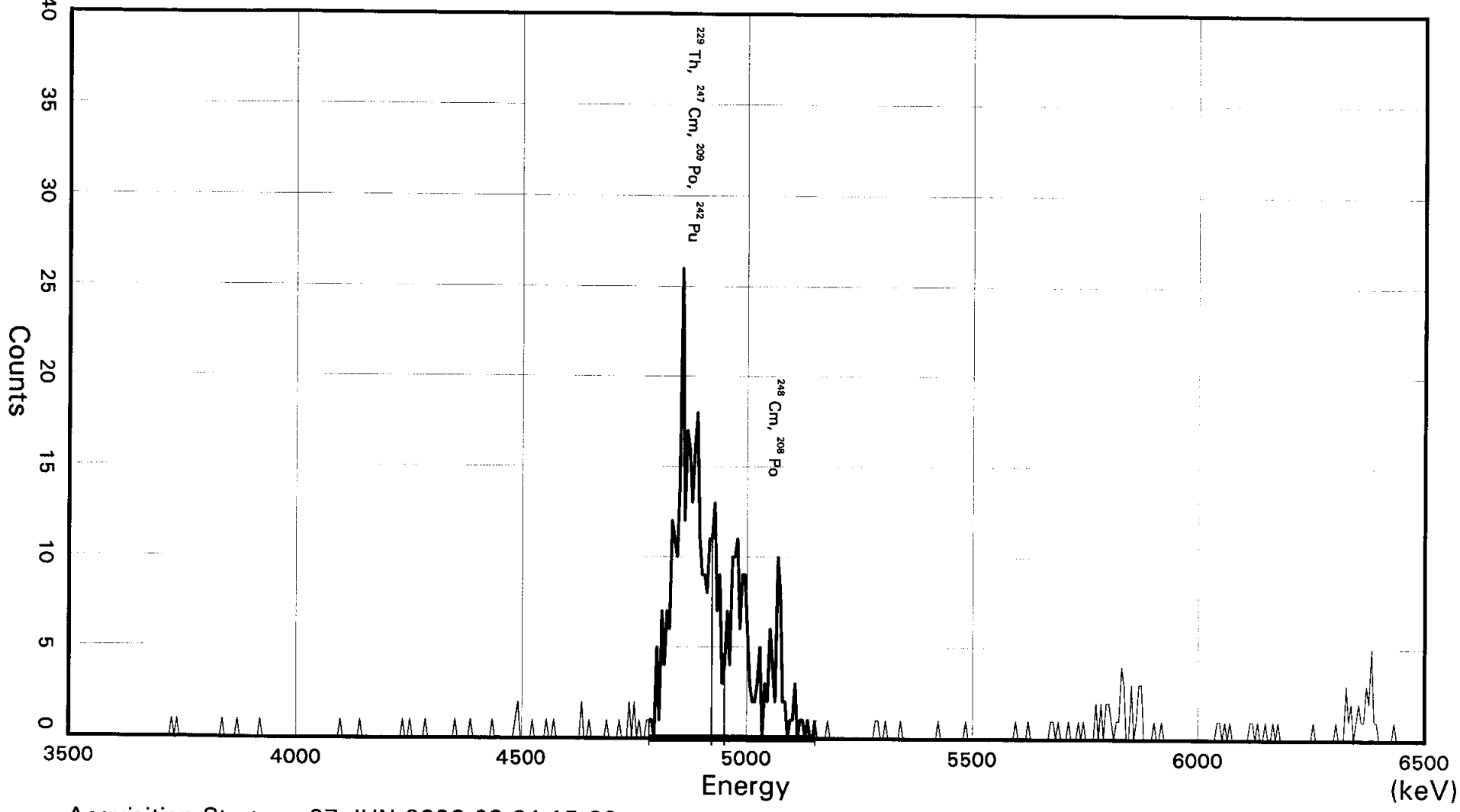
End of Alpha Region Report
(Produced by ANAL Report)

STL Richland WA.

TH BRC

Sample ID: H571V1AA
Detector ID: ALP171 4

Batch ID: 6146436



Acquisition Start: 27-JUN-2006 23:34:15.00
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:
Offset: 3.63871E+03
Slope: 5.52245E+00
Quadrature: 6.68173E-05

SAMPLE IDENTIITY: H571V1AA

TITLE : TH BRC

DETECTOR : ALP171 4
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H571V1AA_270662334D.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 23:34:15 CALIB DATE : 09-JUN-2006 02:56:58

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3638.71 keV CONSTANT FWHM : 11.00000 Channels
SLOPE : 5.52245 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 6.681730E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571V1AA

Detector: ALP171 4
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	112	1	0	0.223	5149.6	227.8	232	273	0.00	0.00	P
PO-209	312	0	0	0.625	4917.9	166.6	207	237	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5339.1	166.9	290	320	0.00	0.00	M
AC-227	5	2	5	0.007	6072.7	167.4	421	451	0.00	0.00	S
TH-227	5	2	5	0.007	6072.7	167.4	421	451	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5457.9	167.0	311	341	0.00	0.00	M
TH-229	312	0	0	0.625	4880.0	166.6	207	237	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4722.4	166.5	179	209	0.00	0.00	M I
TH-232	1	1	0	0.001	4047.7	166.0	57	87	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5354.9	166.9	292	322	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4809.3	166.5	194	224	0.00	0.00	M I
U-235	6	2	0	0.010	4432.5	166.2	126	156	0.00	0.00	
PU-236	17	23	29	0.011	5802.4	167.2	373	403	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4822.7	166.5	197	227	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5533.7	167.0	325	355	0.00	0.00	M
U-238	4	0	0	0.008	4232.7	166.1	90	120	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5191.3	166.8	263	293	0.00	0.00	M I
AM-241	-9999	-9999	0	-10.010	5520.3	167.0	322	352	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5241.5	166.8	272	302	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6147.4	167.5	435	465	0.00	0.00	M
PU-242	312	0	0	0.625	4935.2	166.6	207	237	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5310.0	166.9	284	314	0.00	0.00	M
CM-244	16	21	29	0.011	5839.5	161.7	380	409	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5421.2	167.0	304	334	0.00	0.00	M
CM-247	312	0	0	0.625	4905.1	166.6	207	237	0.00	0.00	P
CM-248	112	1	0	0.223	5113.3	227.8	232	273	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571V1AA
Detector: ALP171 4
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	1		51	0	+	101	0	+	151	2	@	201	5	@	251	1	@	301	0	@	351	1	@	401	0	@	451
		2	0		52	0	+	102	0	+	152	0	@	202	0	@	252	0	@	302	0	@	352	3	@	402	1	-	452
0		3	0		53	0	+	103	1	+	153	1	@	203	3	@	253	0	@	303	1	+	353	3	@	403	0	-	453
0		4	0		54	0	+	104	2	+	154	0	@	204	2	@	254	0	-	304	0	+	354	0	-	404	0	-	454
0		5	0		55	0	+	105	0	+	155	0	@	205	6	@	255	0	@	305	0	+	355	0	-	405	1	-	455
0		6	0		56	0	+	106	0	+	156	1	@	206	4	@	256	0	@	306	0		356	0	-	406	0	-	456
0		7	0	+	57	0	+	107	0		157	1	@	207	2	@	257	1	@	307	0		357	0	-	407	1	-	457
0		8	0	+	58	1	+	108	0		158	1	@	208	10	@	258	0	@	308	1		358	1	-	408	0	-	458
0		9	0	+	59	0	+	109	0		159	0	@	209	8	@	259	0	@	309	0		359	0	-	409	0	-	459
0		10	0	+	60	0	+	110	1		160	5	@	210	2	@	260	0	@	310	0		360	0		410	0	-	460
0		11	0	+	61	1	+	111	0		161	1	@	211	2	@	261	0	@	311	0		361	1		411	0	-	461
0		12	0	+	62	0	+	112	0		162	7	@	212	0	@	262	0	@	312	0		362	0		412	0	-	462
0		13	0	+	63	0	+	113	0		163	4	@	213	1	@	263	0	@	313	0		363	0		413	0	-	463
0		14	0	+	64	0	+	114	0		164	7	@	214	1	@	264	0	@	314	0		364	0		414	0	-	464
0		15	0	+	65	0	+	115	0		165	6	@	215	3	@	265	0	@	315	0		365	0		415	0	-	465
1		16	0	+	66	0	+	116	1		166	12	@	216	0	@	266	0	@	316	0		366	0		416	0		466
0		17	0	+	67	1	+	117	0		167	11	@	217	1	@	267	0	@	317	1		367	0		417	0		467
1		18	0	+	68	0	+	118	0		168	10	@	218	1	@	268	0	@	318	1		368	0		418	0		468
0		19	0	+	69	0	+	119	1		169	14	@	219	0	@	269	0	@	319	0		369	0		419	0		469
0		20	0	+	70	0	+	120	0		170	26	@	220	1	@	270	0	@	320	1		370	0		420	0		470
0		21	0	+	71	0		121	0		171	12	@	221	0	@	271	0	@	321	0		371	0	@	421	1		471
0		22	0	+	72	0		122	0		172	17	@	222	0	@	272	1	@	322	0		372	0	@	422	0		472
0		23	0	+	73	0		123	0		173	16	@	223	1	@	273	0	@	323	0	+	373	0	@	423	0		473
0		24	0	+	74	0		124	0		174	13	@	224	0	@	274	0	@	324	1	+	374	0	@	424	0		474
0		25	0	+	75	0		125	0		175	16	@	225	0	@	275	0	@	325	0	+	375	0	@	425	0		475
0		26	0	+	76	0	+	126	0		176	18	@	226	0	@	276	0	@	326	0	+	376	0	@	426	0		476
0		27	0	+	77	0	+	127	0		177	11	@	227	0	@	277	0	@	327	0	+	377	0	@	427	0		477
0		28	0	+	78	0	+	128	0		178	9	@	228	1	@	278	0	@	328	1	+	378	0	@	428	0		478
0		29	0	+	79	1	+	129	0	+	179	9	@	229	0	@	279	0	@	329	0	+	379	0	@	429	0		479
0		30	0	+	80	0	+	130	2	+	180	8	@	230	0	@	280	0	@	330	1	@	380	0	@	430	1		480
0		31	0	+	81	0	+	131	0	+	181	11	@	231	0	@	281	0	@	331	0	@	381	0	@	431	0		481
0		32	0	+	82	0	+	132	0	+	182	11	-	232	0	@	282	0	@	332	0	@	382	0	@	432	0		482
0		33	1	+	83	0	+	133	1	+	183	13	@	233	0	@	283	1	@	333	0	@	383	1	@	433	0		483
0		34	0	+	84	0	+	134	0	+	184	7	@	234	0	-	284	0	@	334	0	@	384	1	@	434	3		484
0		35	0	+	85	1	+	135	0	+	185	9	@	235	0	@	285	0	@	335	2	@	385	0	-	435	1		485
1		36	0	+	86	0	+	136	0	+	186	3	@	236	0	@	286	0	@	336	0	@	386	1	@	436	2		486
0		37	0	+	87	0	+	137	0	+	187	4	@	237	0	@	287	0	@	337	2	@	387	0	@	437	0		487
0		38	0		88	0	+	138	0	+	188	7	@	238	0	@	288	0	@	338	0	@	388	1	@	438	1		488
0		39	0		89	0	+	139	0	+	189	4	@	239	0	@	289	0	@	339	2	@	389	0	@	439	2		489
0		40	0	+	90	0	+	140	1	+	190	10	@	240	0	@	290	0	@	340	2	@	390	0	@	440	1		490
0		41	1	+	91	0	+	141	0	+	191	10	@	241	0	@	291	0	@	341	1	@	391	0	@	441	1		491
1		42	0	+	92	0	+	142	0	+	192	11	@	242	0	@	292	0	@	342	0	@	392	0	@	442	3		492
0		43	0	+	93	0	+	143	0	+	193	6	@	243	0	@	293	0	@	343	1	@	393	0	@	443	2		493
0		44	0	+	94	1	+	144	0	@	194	9	@	244	0	@	294	0	@	344	1	@	394	0	@	444	5		494
0		45	0	+	95	0	+	145	1	@	195	9	@	245	0	@	295	0	@	345	4	@	395	0	@	445	1		495
0		46	0	+	96	0	+	146	0	@	196	6	@	246	0	@	296	0	@	346	3	@	396	1	@	446	1		496
0		47	0	+	97	0	+	147	0	-	197	3	@	247	1	@	297	0	@	347	0	@	397	1	@	447	0		497
0		48	0	+	98	0	+	148	0	@	198	2	@	248	1	@	298	0	@	348	0	@	398	0	@	448	0		498
0		49	0	+	99	0	+	149	2	@	199	2	@	249	0	@	299	0	@	349	3	@	399	1	@	449	0		499
0		50	0	+	100	0	+	150	0	@	200	3	@	250	0	@	300	0	@	350	0	@	400	0	@	450	0		500

VMS Peak Search Report V1.9 Generated 28-JUN-2006 07:55:10

```
Configuration     : $DISK1:[ALP171.SAMPLE]H571V1AA_270662334D.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID         : H571V1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Start energy      :  3655.27 keV         End energy       :  6483.72 keV
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4880.00	312	0	93.88	224.17	207	30	1.04E-02	5.7	
2	0	5059.61	112	0	49.70	256.50	232	41	3.74E-03	9.4	

VMS Nuclide Identification Report V3.0 Generated 28-JUN-2006 07:55:12

```
Configuration     : $DISK1:[ALP171.SAMPLE]H571V1AA_270662334D.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID         : H571V1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                  2
 Number of unidentified lines                       0
 Number of lines tentatively identified by NID      2      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity :	0.000E+00	0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H571V1AA_270662334D.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4880.00	207	237	312	292	1.13		
5059.60	232	273	112	182	-6.61	47	-0.15

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H571X1AA

Detector: ALP171 5
Report Date: 28-Jun-06 08:05 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	1	2	0.000	5423.2	118.0	301	321
TH-229	376	0	0.753	4845.3	330.4	209	265
TH-230	5	2	0.008	4687.7	118.0	176	196
TH-232	1	0	0.002	4013.0	118.1	62	82

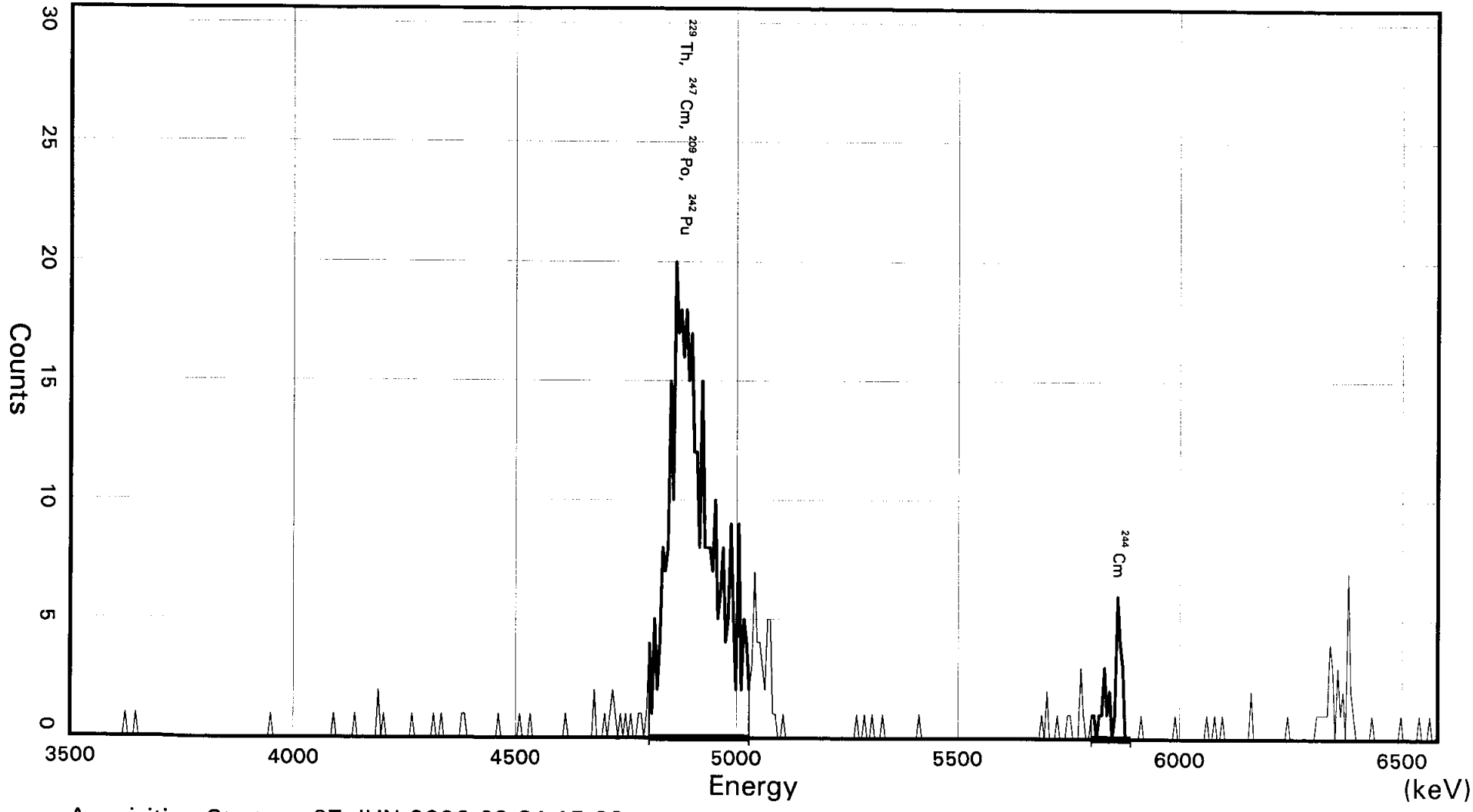
End of Alpha Region Report
(Produced by ANAL Report)

STL Richland WA.

TH BRC

Sample ID: H571X1AA
Detector ID: ALP171 5

Batch ID: 6146436



Acquisition Start: 27-JUN-2006 23:34:15.00
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:
Offset: 3.55898E+03
Slope: 5.90362E+00
Quadrature: -7.04521E-06

SAMPLE IDENTIITY: H571X1AA

TITLE : TH BRC

DETECTOR : ALP171 5
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H571X1AA_270662334E.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 23:34:15 CALIB DATE : 09-JUN-2006 02:57:11

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3558.98 keV CONSTANT FWHM : 7.66667 Channels
SLOPE : 5.90362 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.704521E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H571X1AA

Detector: ALP171 5
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5154.8	224.2	257	295	0.00	0.00	M
PO-209	354	0	0	0.709	4923.1	224.2	211	249	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5344.3	224.2	289	327	0.00	0.00	M
AC-227	3	2	4	0.005	6077.9	224.1	413	451	0.00	0.00	S
TH-227	3	2	4	0.005	6077.9	224.1	413	451	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5463.1	224.2	309	347	0.00	0.00	M
TH-229	354	0	0	0.709	4885.2	224.2	211	249	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4727.6	224.2	184	222	0.00	0.00	M I
TH-232	3	1	2	0.005	4052.9	224.3	70	108	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5360.1	224.2	291	329	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4814.5	224.2	199	237	0.00	0.00	M I
U-235	5	1	1	0.008	4437.7	224.3	135	173	0.00	0.00	S
PU-236	-9999	-9999	0	-10.010	5807.6	224.1	367	405	0.00	0.00	I
NP-237	-9999	-9999	0	-10.010	4827.9	224.2	201	239	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5538.9	224.2	322	360	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4237.9	224.3	101	139	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5196.5	224.2	264	302	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5525.5	224.2	320	358	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5246.7	224.2	272	310	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6152.6	224.1	426	464	0.00	0.00	M
PU-242	354	0	0	0.709	4940.4	224.2	211	249	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5315.2	224.2	284	322	0.00	0.00	M
CM-244	8	30	0	-0.014	5844.7	88.5	380	395	0.00	0.00	P
CM-246	-9999	-9999	0	-10.010	5426.4	224.2	303	341	0.00	0.00	M
CM-247	354	0	0	0.709	4910.3	224.2	211	249	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5118.5	224.2	251	289	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H571X1AA
Detector: ALP171 5
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	@	101	0	+	151	0	-	201	7	+	251	0	@	301	0	@	351	0	+	401	0	@	451
		2	0		52	0	@	102	0	+	152	1	@	202	4	+	252	0	@	302	0	@	352	0	+	402	0	-	452
0		3	0		53	0	@	103	1	+	153	0	@	203	4	+	253	0	-	303	0	@	353	0	+	403	0	-	453
0		4	0		54	0	@	104	0	+	154	1	@	204	3	+	254	0	@	304	0	@	354	0	+	404	0	-	454
0		5	0		55	0	@	105	0	+	155	0	@	205	2	+	255	0	@	305	0	@	355	0	+	405	1	-	455
0		6	0		56	0	@	106	0	+	156	0	@	206	5	+	256	0	@	306	0	@	356	0		406	0	-	456
0		7	0		57	2	@	107	0	+	157	1	@	207	5	@	257	0	@	307	0	@	357	0		407	0	-	457
0		8	0		58	0	@	108	0	+	158	1	@	208	1	@	258	0	@	308	0	@	358	0		408	0	-	458
0		9	0		59	1	-	109	0	+	159	0	@	209	1	@	259	0	@	309	0	+	359	0		409	0	-	459
0		10	0		60	0	-	110	0	+	160	1	@	210	0	@	260	0	@	310	0	+	360	0		410	0	-	460
1		11	0		61	0	-	111	1	+	161	4	@	211	0	@	261	0	@	311	1		361	0		411	0	-	461
0		12	0		62	0	-	112	0	+	162	1	@	212	1	@	262	0	@	312	0		362	1		412	0	-	462
0		13	0		63	0	-	113	0	+	163	5	@	213	0	@	263	0	@	313	2		363	0	@	413	0	-	463
0		14	0		64	0	-	114	0	+	164	2	@	214	0	@	264	1	@	314	0		364	0	@	414	0	-	464
1		15	0		65	0	-	115	1	+	165	4	@	215	0	@	265	0	@	315	0		365	0	@	415	0		465
0		16	1		66	0	-	116	0	+	166	8	@	216	0	@	266	0	@	316	0		366	0	@	416	1		466
0		17	0		67	0	-	117	0	+	167	7	@	217	0	@	267	0	@	317	1	+	367	0	@	417	1		467
0		18	0		68	0	-	118	0	+	168	8	@	218	0	@	268	0	@	318	0	+	368	0	@	418	1		468
0		19	0		69	0	-	119	0	+	169	15	@	219	0	@	269	0	@	319	0	+	369	0	@	419	1		469
0		20	0	+	70	1	-	120	0	+	170	10	@	220	0	@	270	0	@	320	0	+	370	0	@	420	1		470
0		21	0	+	71	0	-	121	0	+	171	20	@	221	0	@	271	0	@	321	1	+	371	0	@	421	4		471
0		22	0	+	72	0	-	122	0	+	172	17	@	222	0	@	272	0	@	322	1	+	372	0	@	422	3		472
0		23	0	+	73	0	-	123	0	+	173	18	@	223	0	@	273	0	@	323	0	+	373	0	@	423	0		473
0		24	0	+	74	0	-	124	0		174	16	@	224	0	@	274	0	@	324	0	+	374	1	@	424	3		474
0		25	0	+	75	0	-	125	0		175	18	@	225	0	@	275	0	@	325	0	+	375	0	@	425	1		475
0		26	0	+	76	0	-	126	0		176	15	@	226	0	@	276	0	@	326	3	+	376	0	-	426	2		476
0		27	0	+	77	0	-	127	0		177	17	@	227	0	@	277	0	@	327	1	+	377	1	@	427	0		477
0		28	0	+	78	1	-	128	0		178	12	@	228	0	@	278	0	@	328	0	+	378	0	@	428	7		478
0		29	0	+	79	0	-	129	1		179	12	@	229	0	@	279	0	@	329	0	+	379	0	@	429	2		479
0		30	0	+	80	0	-	130	0		180	8	@	230	0	@	280	0	@	330	1	@	380	1	@	430	1		480
0		31	0	+	81	1	-	131	0		181	15	@	231	0	@	281	0	@	331	1	@	381	0	@	431	0		481
0		32	0	+	82	0	-	132	0		182	8	@	232	0	@	282	0	@	332	0	@	382	0	@	432	0		482
0		33	0	+	83	0	-	133	0		183	8	@	233	0	@	283	0	@	333	1	@	383	0	@	433	0		483
0		34	0	+	84	0	-	134	0	+	184	8	@	234	0	@	284	0	@	334	1	@	384	0	@	434	0		484
0		35	0	+	85	0	@	135	0	+	185	7	@	235	0	@	285	0	@	335	3	@	385	0	@	435	0		485
0		36	0	+	86	0	@	136	0	+	186	10	@	236	0	@	286	0	@	336	1	@	386	0	@	436	0		486
0		37	0	+	87	0	@	137	0	+	187	5	@	237	0	@	287	0	@	337	2	@	387	0	@	437	1		487
0		38	0	+	88	0	@	138	0	+	188	6	@	238	0	@	288	0	@	338	0	@	388	0	@	438	0		488
0		39	0	+	89	1	@	139	0	+	189	8	@	239	0	@	289	0	@	339	1	@	389	0	@	439	0		489
0		40	1	+	90	1	+	140	2	+	190	4	@	240	1	@	290	0	@	340	6	@	390	0	@	440	0		490
0		41	0	+	91	0	+	141	0	+	191	5	@	241	0	@	291	0	@	341	4	@	391	2	@	441	0		491
0		42	0	+	92	0	+	142	0	+	192	9	@	242	0	@	292	0	@	342	3	@	392	0	@	442	0		492
0		43	0	+	93	0	+	143	0	+	193	5	@	243	1	@	293	0	@	343	0	@	393	0	@	443	0		493
0		44	0	+	94	0	+	144	1	+	194	2	@	244	0	@	294	0	@	344	0	@	394	0	@	444	0		494
0		45	0	+	95	0	+	145	0	+	195	9	@	245	0	@	295	0	@	345	0	+	395	0	@	445	0		495
0		46	0	+	96	0	+	146	1	+	196	2	@	246	1	@	296	0	@	346	0	+	396	0	@	446	0		496
0		47	0	+	97	0	+	147	2	+	197	5	@	247	0	@	297	0	@	347	0	+	397	0	@	447	0		497
0		48	1	+	98	0	+	148	1	+	198	4	@	248	0	@	298	0	@	348	0	+	398	0	@	448	1		498
0		49	0	+	99	0	+	149	0	@	199	2		249	0	@	299	0	@	349	1	+	399	0	@	449	0		499
0		50	0	+	100	0	+	150	1	@	200	3		250	1	@	300	0	@	350	0	+	400	0	@	450	0		500

VMS Peak Search Report V1.9 Generated 28-JUN-2006 07:55:16

```
Configuration     : $DISK1:[ALP171.SAMPLE]H571X1AA_270662334E.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID         : H571X1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Start energy      :  3576.69 keV         End energy       :  6579.78 keV
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4885.22	354	0	88.55	224.71	211	38	1.18E-02	5.3	
2	0	5863.27	8	0	23.61	390.50	380	15	2.67E-04	35.4	

VMS Nuclide Identification Report V3.0 Generated 28-JUN-2006 07:55:19

```
Configuration     : $DISK1:[ALP171.SAMPLE]H571X1AA_270662334E.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID         : H571X1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                  2
 Number of unidentified lines                       0
 Number of lines tentatively identified by NID      2      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-244	18.10Y	1.01	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

```
   Grand Total Activity :  0.000E+00    0.000E+00
```

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H571X1AA_270662334E.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4885.21	211	249	354	339	0.80		
5863.26	380	395	8	24	-5.66		

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

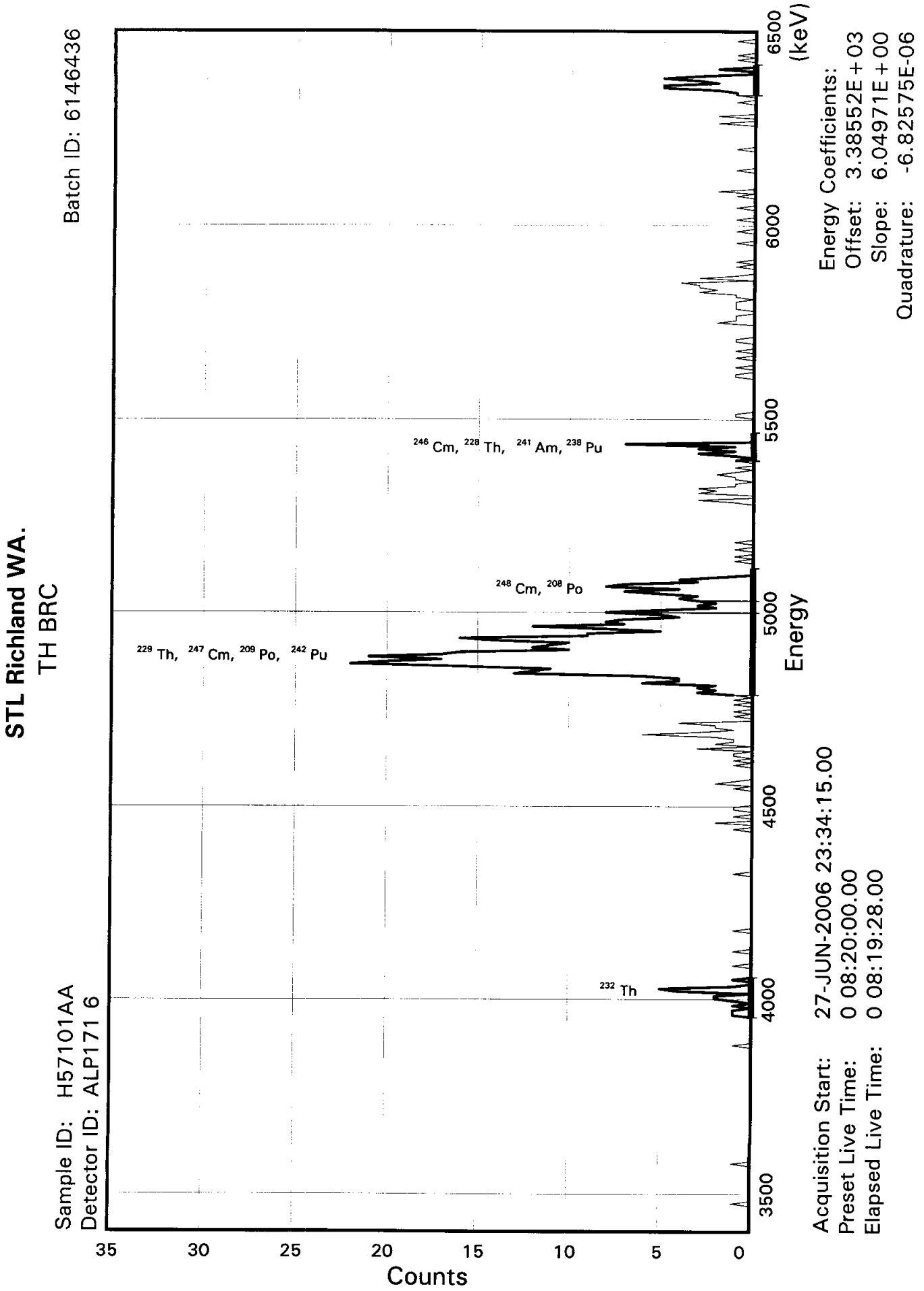
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H57101AA

Detector: ALP171 6
Report Date: 28-Jun-06 08:06 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	24	2	0.046	5423.2	120.9	322	342
TH-229	415	3	0.828	4845.3	356.7	226	285
TH-230	31	1	0.061	4687.7	120.9	200	220
TH-232	19	1	0.037	4013.0	121.0	89	109

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6146436
Sample ID: H57101AA
Detector ID: ALP171 6
246 Cm, 228 Th, 241 Am, 238 Pu
248 Cm, 208 Po
229 Th, 247 Cm, 209 Po, 242 Pu
232 Th
Counts
35
30
25
20
15
10
5
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 27-JUN-2006 23:34:15.00
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.38552E+03
Slope: 6.04971E+00
Quadrature: -6.82575E-06

SAMPLE IDENTITY: H57101AA

TITLE : TH BRC

DETECTOR : ALP171 6
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H57101AA_270662334F.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 23:34:15 CALIB DATE : 09-JUN-2006 02:57:29

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3385.52 keV CONSTANT FWHM : 7.83333 Channels
SLOPE : 6.04971 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.682575E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H57101AA

Detector: ALP171 6
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	55	2	0	0.108	5159.0	114.9	267	286	0.00	0.00	P
PO-209	357	1	0	0.714	4927.3	241.9	232	272	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5348.5	241.8	308	348	0.00	0.00	M I
AC-227	-9999	-9999	0	-10.010	6082.1	241.7	429	469	0.00	0.00	M
TH-227	-9999	-9999	0	-10.010	6082.1	241.7	429	469	0.00	0.00	M
TH-228	18	0	0	0.036	5467.3	72.5	332	344	0.00	0.00	P
TH-229	357	1	0	0.714	4889.4	241.9	232	272	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4731.8	241.9	206	246	0.00	0.00	M I
TH-232	20	1	0	0.039	4057.1	102.8	94	111	0.00	0.00	P
U-232	-9999	-9999	0	-10.010	5364.2	241.8	311	351	0.00	0.00	M I
U-234	-9999	-9999	0	-10.010	4818.7	241.9	220	260	0.00	0.00	M I
U-235	10	1	0	0.020	4441.9	241.9	158	198	0.00	0.00	S
PU-236	17	17	33	0.016	5811.7	241.8	385	425	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4832.1	241.9	223	263	0.00	0.00	M I
PU-238	18	0	0	0.036	5543.1	72.5	332	344	0.00	0.00	P
U-238	2	1	0	0.004	4242.1	241.9	125	165	0.00	0.00	S
PU-239	-9999	-9999	0	-10.010	5200.7	241.8	283	323	0.00	0.00	M I
AM-241	18	0	0	0.036	5529.7	72.5	332	344	0.00	0.00	P
AM-242M	-9999	-9999	0	-10.010	5250.9	241.8	292	332	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6156.8	241.7	442	482	0.00	0.00	M
PU-242	357	1	0	0.714	4944.6	241.9	232	272	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5319.4	241.8	303	343	0.00	0.00	M I
CM-244	-9999	-9999	0	-10.010	5848.9	241.8	391	431	0.00	0.00	M
CM-246	18	0	0	0.036	5430.6	72.5	332	344	0.00	0.00	P
CM-247	357	1	0	0.714	4914.5	241.9	232	272	0.00	0.00	P
CM-248	55	2	0	0.108	5122.7	114.9	267	286	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H57101AA
Detector: ALP171 6
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	1	+	101	0	+	151	0		201	10	@	251	0	@	301	1	-	351	0	@	401	0	@	451	0		501
		2	0		52	2	+	102	0	+	152	1		202	12	@	252	0	@	302	1		352	1	@	402	0	@	452	0		502
0		3	0		53	2	+	103	0	+	153	0		203	11	@	253	0	-	303	0		353	1	@	403	0	@	453	1		503
0		4	0		54	0	+	104	0	+	154	1		204	10	@	254	0	@	304	0		354	3	@	404	0	@	454	0		504
0		5	0		55	4	+	105	1	+	155	0		205	14	@	255	0	@	305	0		355	2	@	405	0	@	455	1		505
0		6	0		56	5	+	106	0	+	156	1	+	206	16	@	256	0	@	306	0		356	3	@	406	1	@	456	0		506
0		7	0		57	1	+	107	0	+	157	1	+	207	9	@	257	0	@	307	0		357	3	@	407	0	@	457	0		507
0		8	0		58	0	+	108	0	@	158	0	+	208	9	@	258	0	@	308	0		358	4	@	408	0	@	458	0		508
0		9	0		59	0	+	109	0	@	159	3	+	209	5	@	259	0	@	309	0		359	0	@	409	0	@	459	0		509
0		10	0		60	1	+	110	0	@	160	0	+	210	8	@	260	0	@	310	0		360	3	@	410	0	@	460	0		510
0		11	0		61	0		111	0	@	161	2	+	211	12	@	261	0	@	311	0		361	1	@	411	0	@	461	1		511
0		12	0		62	0		112	0	@	162	1	+	212	7	@	262	0	@	312	0		362	0	@	412	0	@	462	0		512
0		13	0		63	0		113	0	@	163	1	+	213	8	@	263	0	@	313	0		363	0	@	413	0	@	463			
0		14	0		64	0		114	0	@	164	2	+	214	7	@	264	1	@	314	0		364	0	@	414	0	@	464			
1		15	0		65	0		115	0	@	165	6	+	215	4	@	265	3	@	315	0		365	1	@	415	1	@	465			
0		16	0		66	1		116	0	+	166	3	+	216	5	@	266	0	@	316	0		366	0	@	416	0	@	466			
0		17	0		67	0		117	0	+	167	1	+	217	8	-	267	0	@	317	0		367	1	@	417	0	@	467			
0		18	0		68	0		118	0	+	168	2	+	218	5	@	268	3	@	318	1		368	0	@	418	0	@	468			
0		19	0		69	0		119	0	+	169	2	+	219	2	@	269	2	@	319	1		369	0	@	419	0	@	469			
0		20	0		70	0		120	0	+	170	4	@	220	3	@	270	3	@	320	0		370	0	@	420	0	-	470			
0		21	0		71	0		121	0	+	171	0	@	221	2	@	271	1	@	321	0		371	0	@	421	0	-	471			
0		22	0		72	1		122	0	+	172	0	@	222	3	@	272	1	@	322	1		372	0	@	422	0	-	472			
0		23	0		73	0		123	0	+	173	1	-	223	4	@	273	0	@	323	0		373	0	@	423	0	-	473			
0		24	0		74	0		124	1	+	174	0	@	224	3	@	274	1	@	324	0		374	0	@	424	0	-	474			
0		25	0		75	0	+	125	0	+	175	1	@	225	5	@	275	1	@	325	0		375	1	@	425	0	-	475			
0		26	0		76	0	+	126	0	+	176	0	@	226	7	@	276	2	@	326	1		376	0	-	426	2	-	476			
0		27	0		77	0	+	127	2	+	177	0	@	227	4	@	277	1	@	327	0		377	0	-	427	0	-	477			
0		28	0		78	0	+	128	0	+	178	1	@	228	8	@	278	0	@	328	0		378	0	-	428	0	-	478			
0		29	0		79	0	+	129	0	+	179	0	@	229	7	@	279	1	@	329	1		379	0	@	429	2	-	479			
0		30	0		80	0	+	130	1	+	180	1	@	230	3	@	280	0	@	330	0		380	1	@	430	0	-	480			
0		31	0		81	1	+	131	0	+	181	0	@	231	4	@	281	0	@	331	0		381	0	@	431	0	-	481			
1		32	1		82	0	+	132	0	+	182	1	@	232	2	@	282	1	-	332	0		382	0	@	432	0	-	482			
0		33	0		83	0	+	133	1	+	183	3	@	233	0	@	283	0	@	333	1		383	0	@	433	0		483			
0		34	0		84	0	+	134	1	+	184	2	@	234	0	@	284	1	@	334	1		384	0	@	434	0		484			
0		35	0		85	0	+	135	0	+	185	3	@	235	0	@	285	3	@	335	0	+	385	1	@	435	1		485			
0		36	0		86	0	+	136	0	+	186	2	@	236	0	+	286	1	@	336	0	+	386	0	@	436	0		486			
0		37	0		87	0	+	137	0	+	187	6	@	237	0	+	287	3	@	337	0	+	387	0	@	437	0		487			
0		38	0		88	0	+	138	0	+	188	4	@	238	0	+	288	1	@	338	0	+	388	0	@	438	1		488			
0		39	0		89	0	+	139	0	+	189	4	@	239	1	+	289	7	@	339	0	+	389	0	@	439	1		489			
0		40	0		90	0	+	140	0	+	190	6	@	240	0	+	290	0	@	340	0	+	390	1	@	440	2		490			
0		41	0		91	0	+	141	0	+	191	13	@	241	1	+	291	0	@	341	2	@	391	0	@	441	5		491			
0		42	0		92	0	+	142	1	+	192	12	@	242	0	@	292	0	@	342	1	@	392	0	-	442	5		492			
0		43	0		93	0	+	143	0	+	193	11	@	243	0	@	293	0	@	343	1	@	393	0	@	443	2		493			
0		44	0	+	94	0	+	144	2	+	194	16	@	244	1	@	294	0	@	344	1	@	394	0	@	444	3		494			
0		45	1	+	95	0	+	145	1	+	195	22	@	245	0	@	295	0	@	345	0	@	395	1	@	445	5		495			
0		46	1	+	96	0	+	146	0	+	196	20	@	246	0	@	296	0	@	346	0	@	396	0	@	446	3		496			
0		47	1	+	97	0	+	147	0	+	197	17	@	247	1	@	297	0	@	347	1	@	397	2	@	447	0		497			
0		48	0	+	98	0	+	148	0	+	198	21	@	248	0	@	298	0	@	348	1	@	398	0	@	448	0		498			
0		49	1	+	99	0	+	149	0		199	17	@	249	0	@	299	0	-	349	1	@	399	0	@	449	2		499			
0		50	0	+	100	0	+	150	0		200	16	@	250	0	@	300	0	-	350	1	@	400	0	@	450	0		500			

VMS Peak Search Report V1.9 Generated 28-JUN-2006 07:55:21

Configuration : $DISK1:[ALP171.SAMPLE]H57101AA_270662334F.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID : H57101AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3403.67 keV End energy : 6481.19 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4022.87	20	0	24.20	105.36	94	17	6.67E-04	22.4	
2	0	4889.37	357	0	102.85	248.65	232	40	1.19E-02	5.3	
3	0	5061.72	55	0	42.35	277.16	267	19	1.84E-03	13.5	
4	0	5427.13	18	0	36.30	337.60	332	12	6.01E-04	23.6	
5	0	6363.35	28	0	36.30	492.50	488	13	9.34E-04	18.9	

VMS Nuclide Identification Report V3.0 Generated 28-JUN-2006 07:55:24

```
Configuration     : $DISK1:[ALP171.SAMPLE]H57101AA_270662334F.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID         : H57101AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                5
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    4       80.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
TH-228	1.91Y	1.05	0.000E+00	0.000E+00	0.000E+00	0.00	
TH-232	1.41E+10Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-246	8500.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-238	87.74Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-241	432.20Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

```
   Grand Total Activity :  0.000E+00    0.000E+00
```

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H57101AA_270662334F.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4022.86	94	111	20	20	0.00		
4889.37	232	272	357	366	-0.48		
5061.72	267	286	55	70	-2.02	23	-0.05
5427.12	332	344	18	17	0.24		
6363.34	488	501	28	29	-0.19		

End of Report

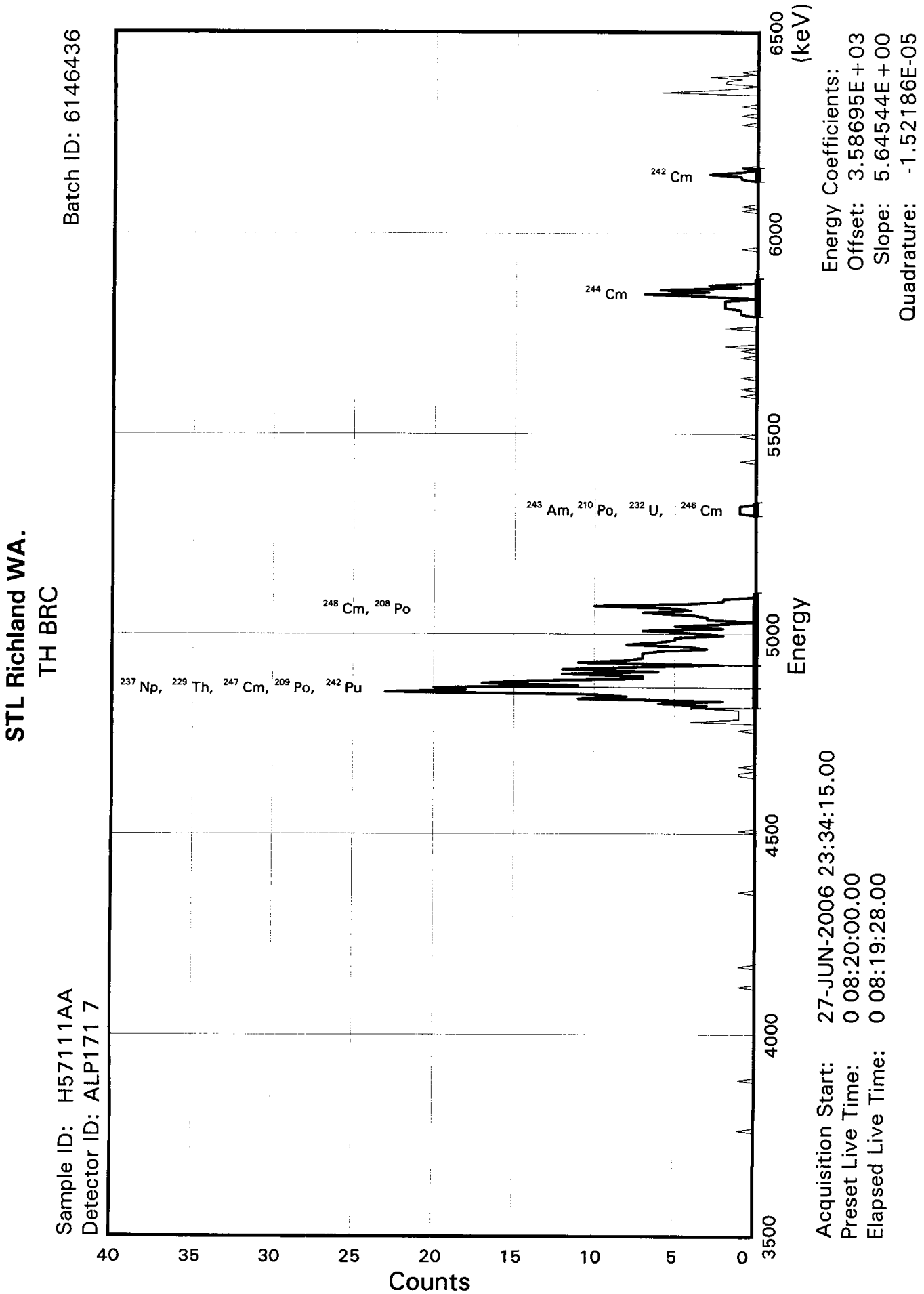
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H57111AA

Detector: ALP171 7
Report Date: 28-Jun-06 08:06 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	1	0	0.002	5423.2	112.7	311	331
TH-229	353	0	0.707	4845.3	327.0	211	269
TH-230	3	0	0.006	4687.7	112.8	180	200
TH-232	0	1	-0.001	4013.0	112.9	60	80

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6146436
Sample ID: H57111AA
Detector ID: ALP171 7
242 Cm
244 Cm
243 Am, 210 Po, 232 U, 246 Cm
248 Cm, 208 Po
237 Np, 229 Th, 247 Cm, 209 Po, 242 Pu
Energy Coefficients:
Offset: 3.58695E+03
Slope: 5.64544E+00
Quadrature: -1.52186E-05
Acquisition Start: 27-JUN-2006 23:34:15.00
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Counts
40 35 30 25 20 15 10 5 0
Energy
3500 4000 4500 5000 5500 6000 6500
(keV)

SAMPLE IDENTIITY: H57111AA

TITLE : TH BRC

DETECTOR : ALP171 7
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H57111AA_270662334G.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 23:34:15 CALIB DATE : 09-JUN-2006 02:57:47

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3586.95 keV CONSTANT FWHM : 6.33333 Channels
SLOPE : 5.64544 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.152186E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H57111AA

Detector: ALP171 7
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	91	0	0	0.182	5136.1	236.8	227	269	0.00	0.00	P
PO-209	250	0	0	0.501	4904.4	107.1	218	237	0.00	0.00	P
PO-210	4	0	0	0.008	5325.6	33.8	303	309	0.00	0.00	P
AC-227	2	1	0	0.003	6059.2	107.0	430	449	0.00	0.00	
TH-227	2	1	0	0.003	6059.2	107.0	430	449	0.00	0.00	
TH-228	-9999	-9999	0	-10.010	5444.4	107.1	321	340	0.00	0.00	M
TH-229	250	0	0	0.501	4866.5	107.1	218	237	0.00	0.00	P
TH-230	2	0	1	0.003	4708.9	107.1	190	209	0.00	0.00	S
TH-232	0	1	0	-0.001	4034.2	107.2	70	89	0.00	0.00	
U-232	4	0	0	0.008	5341.4	33.8	303	309	0.00	0.00	P
U-234	-9999	-9999	0	-10.010	4795.8	107.1	205	224	0.00	0.00	S I
U-235	0	1	0	-0.001	4419.0	107.2	139	158	0.00	0.00	
PU-236	-9999	-9999	0	-10.010	5788.9	107.0	382	401	0.00	0.00	I
NP-237	250	0	0	0.501	4809.2	107.1	218	237	0.00	0.00	P
PU-238	-9999	-9999	0	-10.010	5520.2	107.1	334	353	0.00	0.00	M
U-238	1	0	0	0.002	4219.2	107.2	103	122	0.00	0.00	
PU-239	0	2	0	-0.002	5177.8	107.1	273	292	0.00	0.00	S
AM-241	-9999	-9999	0	-10.010	5506.8	107.1	332	351	0.00	0.00	M
AM-242M	0	0	0	0.000	5228.0	107.1	282	301	0.00	0.00	S
CM-242	6	5	0	0.007	6133.9	33.8	451	457	0.00	0.00	P
PU-242	250	0	0	0.501	4921.7	107.1	218	237	0.00	0.00	P
AM-243	4	0	0	0.008	5296.5	33.8	303	309	0.00	0.00	P
CM-244	33	20	0	0.046	5826.0	95.8	391	408	0.00	0.00	P
CM-246	4	0	0	0.008	5407.7	33.8	303	309	0.00	0.00	P
CM-247	250	0	0	0.501	4891.6	107.1	218	237	0.00	0.00	P
CM-248	91	0	0	0.182	5099.8	236.8	227	269	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H57111AA
Detector: ALP171 7
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	+	201	4	@	251	0	-	301	0	@	351	7	@	401	0	+	451
		2	0		52	0		102	0	+	152	0	+	202	7	@	252	0		302	0	+	352	3	-	402	1	+	452
0		3	1		53	1	+	103	0	+	153	0	+	203	2	@	253	0	@	303	0	+	353	6	-	403	1	+	453
0		4	0		54	0	+	104	0	+	154	0	+	204	5	@	254	1	@	304	0		354	1	-	404	3	+	454
0		5	0		55	0	+	105	0	+	155	0	@	205	2	@	255	1	@	305	0		355	3	-	405	1	+	455
0		6	0		56	0	+	106	0	+	156	0	@	206	0	@	256	1	@	306	1		356	0	-	406	0	+	456
0		7	0		57	0	+	107	0	+	157	0	@	207	3	@	257	1	@	307	0		357	0	-	407	1		457
0		8	0		58	0	+	108	0	+	158	1	@	208	3	@	258	0	@	308	0		358	0		408	0		458
0		9	0		59	0	+	109	0		159	0	@	209	4	@	259	0		309	1		359	0		409	0		459
0		10	0		60	0	+	110	0		160	0	-	210	7	@	260	0		310	0		360	0		410	0		460
0		11	0		61	0	+	111	0		161	0	-	211	4	@	261	0		311	0		361	0		411	0		461
0		12	0		62	0	+	112	0		162	4	-	212	5	@	262	0		312	0		362	0		412	0		462
0		13	0		63	0	+	113	1		163	1	-	213	10	@	263	0		313	0		363	0		413	0		463
0		14	0		64	0	+	114	0		164	1	-	214	4	@	264	0		314	1		364	0		414	0		464
0		15	0		65	0	+	115	0		165	1	-	215	2	@	265	0		315	0		365	0		415	0		465
0		16	0		66	0	+	116	0		166	1	-	216	2	@	266	0		316	0		366	0		416	0		466
0		17	0		67	0	+	117	0		167	1	-	217	0	@	267	0		317	0		367	0		417	0		467
0		18	0		68	0	+	118	0		168	4	-	218	0	@	268	0		318	0		368	0		418	0		468
0		19	0		69	0	+	119	0		169	3	@	219	0		269	0		319	0		369	0		419	0		469
0		20	0	+	70	0	+	120	0		170	6	@	220	0		270	0		320	0		370	0		420	0		470
0		21	0	+	71	0	+	121	0		171	2	@	221	0		271	0	+	321	0		371	1		421	0		471
0		22	0	+	72	0	+	122	0		172	11	@	222	0		272	0	+	322	0		372	0		422	0		472
0		23	0	+	73	0		123	0		173	8	@	223	0	+	273	0	+	323	1		373	0		423	0		473
0		24	0	+	74	0		124	0		174	10	@	224	0	+	274	0	+	324	0		374	0		424	0		474
0		25	0	+	75	0		125	0		175	23	@	225	0	+	275	0	+	325	0		375	0		425	0		475
0		26	0	+	76	0		126	0		176	18	@	226	0	+	276	0	+	326	1		376	0		426	1		476
0		27	0	+	77	0		127	0		177	20	-	227	0	+	277	1	+	327	0		377	0		427	0		477
0		28	0	+	78	0		128	0		178	11	@	228	0	+	278	0	+	328	2		378	0		428	0		478
0		29	0	+	79	0		129	0		179	17	@	229	0	+	279	0	+	329	0		379	0		429	0		479
0		30	0	+	80	0		130	0		180	14	@	230	0	+	280	0	+	330	0		380	0	@	430	1		480
1		31	0	+	81	0		131	0		181	7	@	231	0	+	281	0	+	331	0		381	0	@	431	0		481
0		32	0	+	82	0		132	0		182	7	@	232	0	@	282	0	@	332	0	+	382	0	@	432	0		482
0		33	0	+	83	0		133	0		183	12	@	233	0	@	283	0	@	333	0	+	383	0	@	433	0		483
0		34	0	+	84	0		134	0		184	6	@	234	0	@	284	0	@	334	0	+	384	0	@	434	1		484
0		35	0	+	85	0		135	0		185	12	@	235	0	@	285	0	@	335	0	+	385	0	@	435	0		485
0		36	0	+	86	1		136	0		186	8	@	236	0	@	286	0	@	336	2	+	386	0	@	436	0		486
0		37	0	+	87	0		137	0		187	2	@	237	0	@	287	0	@	337	0	+	387	0	@	437	0		487
0		38	0	+	88	0		138	1		188	11	@	238	0	@	288	1	@	338	0	+	388	1	@	438	0		488
0		39	0	+	89	0	+	139	1		189	8	@	239	0	@	289	0	@	339	0	+	389	0	@	439	0		489
0		40	0		90	0	+	140	0	+	190	7	@	240	0	@	290	0	@	340	0	+	390	1	@	440	6		490
0		41	0		91	0	+	141	0	+	191	7	@	241	0	@	291	0	@	341	0	@	391	0	@	441	3		491
0		42	0		92	0	+	142	1	+	192	7	@	242	0	@	292	0	@	342	1	@	392	0	@	442	1		492
0		43	0		93	0	+	143	0	+	193	6	@	243	0	-	293	0	@	343	1	@	393	0	@	443	0		493
0		44	1		94	0	+	144	0	+	194	3	@	244	0	-	294	0	@	344	1	@	394	0	@	444	2		494
0		45	0		95	0	+	145	0	+	195	4	@	245	0	-	295	0	@	345	2	@	395	0	@	445	2		495
0		46	0		96	0	+	146	0	+	196	8	@	246	0	-	296	0	@	346	2	@	396	0	@	446	1		496
0		47	0		97	0	+	147	0	+	197	6	@	247	0	-	297	0	@	347	2	@	397	0	@	447	3		497
0		48	0		98	0	+	148	0	+	198	5	@	248	0	-	298	0	@	348	2	@	398	0	@	448	0		498
0		49	0		99	0	+	149	0	+	199	5	@	249	0	-	299	0	@	349	0	@	399	0	@	449	1		499
0		50	0		100	0	+	150	0	+	200	2	@	250	0	-	300	0	@	350	3	@	400	0		450	0		500

VMS Peak Search Report V1.9 Generated 28-JUN-2006 07:55:27

Configuration : $DISK1:[ALP171.SAMPLE]H57111AA_270662334G.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID : H57111AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3603.88 keV End energy : 6473.42 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4866.51	250	0	39.52	226.79	218	19	8.34E-03	6.3	
2	0	5062.79	91	0	33.87	261.61	227	42	3.04E-03	10.5	
3	0	5310.21	4	0	22.58	305.50	303	6	1.33E-04	50.0	
4	0	5849.53	33	0	16.94	401.21	391	17	1.10E-03	17.4	
5	0	6142.33	6	0	16.94	453.20	451	6	2.00E-04	40.8	

VMS Nuclide Identification Report V3.0 Generated 28-JUN-2006 07:55:30

```
Configuration     : $DISK1:[ALP171.SAMPLE]H57111AA_270662334G.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID         : H57111AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                5
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    5      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-210	138.38D	1.28	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-246	8500.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-242	162.80D	1.23	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-243	7370.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-244	18.10Y	1.01	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			

```
   Grand Total Activity :  0.000E+00    0.000E+00
```

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H57111AA_270662334G.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4866.50	218	237	250	201	3.10		
5062.78	227	269	91	259	-17.61	116	-0.16
5310.20	303	309	4	4	0.00		
5849.52	391	408	33	34	-0.17		
6142.33	451	457	6	7	-0.41		

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H57121AA

Detector: ALP171 8
Report Date: 28-Jun-06 08:06 AM
Acquire Date: 27-JUN-2006 23:34:15.00
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	1	0	0.002	5423.2	117.6	307	327
TH-229	524	1	1.048	4845.3	359.1	209	270
TH-230	8	0	0.016	4687.7	117.8	182	202
TH-232	1	0	0.002	4013.0	117.9	67	87

End of Alpha Region Report
(Produced by ANAL Report)

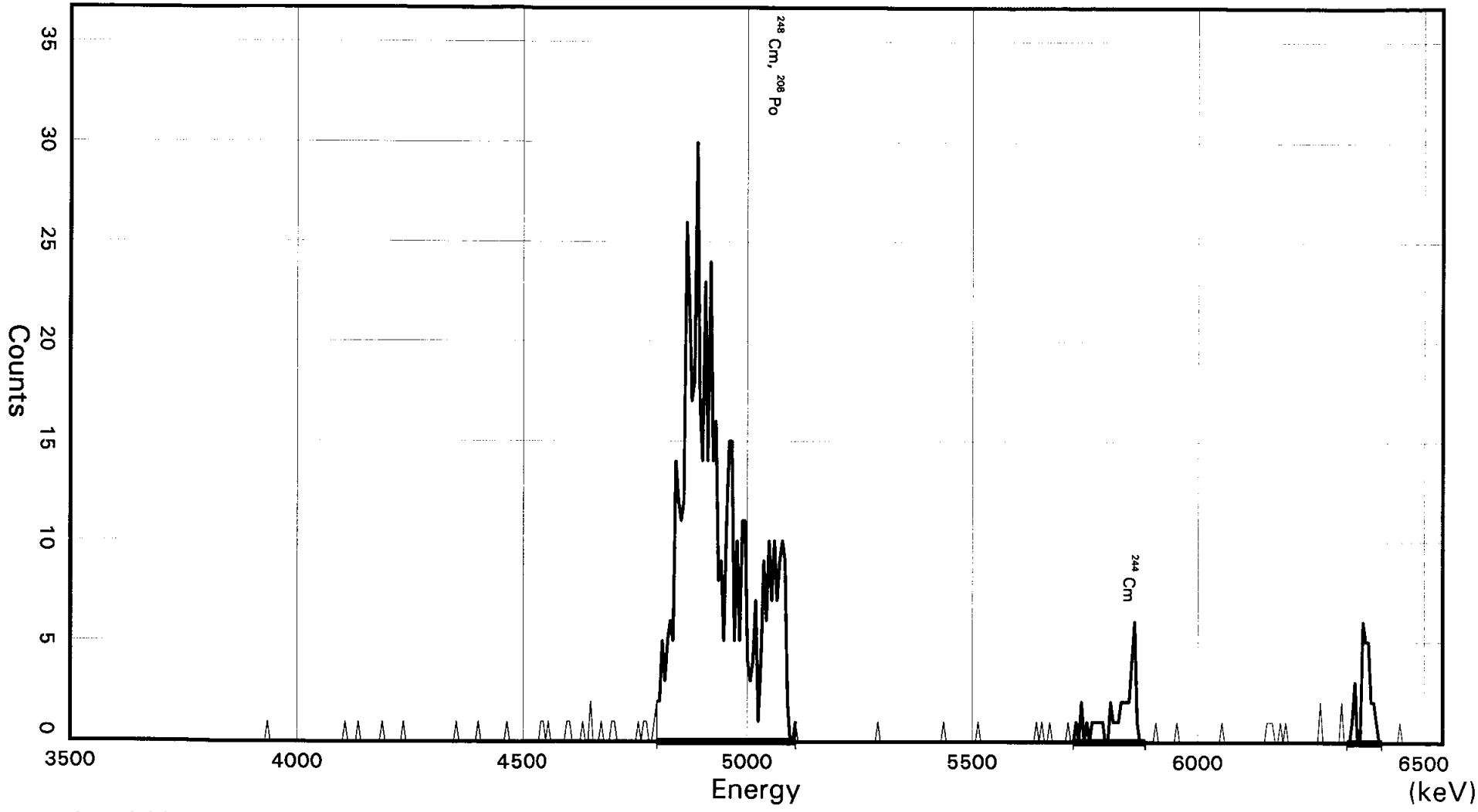
STL Richland WA.

TH BRC

Sample ID: H57121AA

Detector ID: ALP171 8

Batch ID: 6146436



Acquisition Start: 27-JUN-2006 23:34:15.00

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.52789E+03

Slope: 5.89894E+00

Quadrature: -2.64137E-05

SAMPLE IDENTIITY: H57121AA

TITLE : TH BRC

DETECTOR : ALP171 8
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H57121AA_270662334H.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 27-JUN-2006 23:34:15 CALIB DATE : 09-JUN-2006 02:58:05

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3527.89 keV CONSTANT FWHM : 7.33333 Channels
SLOPE : 5.89894 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.264137E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Spectrum Listing
for Spectra Not Processed by Alp_rgn_cnts
(Version: 29-Jun-92)

Sample Identity: H57121AA
Detector: ALP171 8
Report Date: 28-Jun-06 07:55 AM
Acquire Date: 27-JUN-2006 23:34:15.00

Flags Key
Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1		0	51		0	101		0	151		0	201		3	251		0	301		0	351		0	401		1	451		0	501
		2		0	52		0	102		0	152		0	202		4	252		0	302		0	352		0	402		0	452		0	502
	0	3		0	53		1	103		0	153		0	203		7	253		0	303		0	353		0	403		1	453		0	503
	0	4		0	54		0	104		0	154		0	204		1	254		0	304		0	354		1	404		0	454		0	504
	0	5		0	55		0	105		0	155		0	205		4	255		0	305		0	355		0	405		0	455		0	505
	0	6		0	56		0	106		0	156		0	206		9	256		0	306		0	356		0	406		0	456		0	506
	0	7		0	57		0	107		0	157		0	207		6	257		0	307		0	357		0	407		0	457		0	507
	0	8		0	58		0	108		0	158		0	208		10	258		0	308		0	358		0	408		0	458		0	508
	0	9		0	59		0	109		1	159		1	209		7	259		0	309		1	359		0	409		0	459		0	509
	0	10		0	60		0	110		0	160		0	210		10	260		0	310		0	360		0	410		0	460		0	510
	0	11		0	61		0	111		0	161		1	211		7	261		0	311		1	361		0	411		0	461		0	511
	0	12		0	62		1	112		0	162		1	212		9	262		0	312		0	362		1	412		0	462		0	512
	0	13		0	63		0	113		0	163		0	213		10	263		0	313		0	363		0	413		0	463			
	0	14		0	64		0	114		0	164		0	214		9	264		0	314		1	364		0	414		0	464			
	0	15		0	65		0	115		0	165		1	215		2	265		0	315		0	365		0	415		0	465			
	0	16		0	66		0	116		0	166		2	216		0	266		0	316		0	366		0	416		2	466			
	0	17		0	67		0	117		0	167		2	217		0	267		0	317		0	367		0	417		0	467			
	0	18		0	68		0	118		0	168		5	218		1	268		0	318		0	368		0	418		0	468			
	0	19		1	69		0	119		0	169		3	219		0	269		0	319		0	369		0	419		0	469			
	0	20		0	70		1	120		0	170		5	220		0	270		0	320		0	370		0	420		0	470			
	0	21		0	71		0	121		0	171		6	221		0	271		0	321		1	371		0	421		0	471			
	0	22		0	72		0	122		1	172		5	222		0	272		0	322		0	372		0	422		0	472			
	0	23		0	73		0	123		1	173		14	223		0	273		0	323		0	373		0	423		0	473			
	0	24		0	74		0	124		0	174		12	224		0	274		1	324		1	374		0	424		2	474			
	0	25		0	75		0	125		1	175		11	225		0	275		0	325		0	375		0	425		0	475			
	0	26		0	76		0	126		0	176		12	226		0	276		0	326		2	376		0	426		0	476			
	0	27		0	77		0	127		0	177		26	227		0	277		0	327		0	377		0	427		0	477			
	0	28		0	78		0	128		0	178		22	228		0	278		0	328		1	378		0	428		1	478			
	0	29		0	79		0	129		0	179		17	229		0	279		0	329		0	379		1	429		3	479			
	0	30		0	80		0	130		0	180		18	230		0	280		0	330		1	380		0	430		0	480			
	0	31		0	81		0	131		0	181		30	231		0	281		0	331		1	381		0	431		0	481			
	0	32		0	82		0	132		1	182		17	232		0	282		0	332		1	382		0	432		6	482			
	0	33		0	83		0	133		1	183		14	233		0	283		0	333		1	383		0	433		5	483			
	0	34		0	84		0	134		0	184		23	234		0	284		0	334		1	384		0	434		5	484			
	0	35		0	85		0	135		0	185		14	235		0	285		0	335		0	385		0	435		2	485			
	0	36		0	86		0	136		0	186		24	236		0	286		0	336		0	386		0	436		2	486			
	0	37		0	87		0	137		0	187		14	237		0	287		1	337		2	387		0	437		1	487			
	0	38		0	88		0	138		1	188		16	238		0	288		0	338		1	388		0	438		0	488			
	0	39		0	89		0	139		0	189		8	239		0	289		0	339		1	389		0	439		0	489			
	0	40		0	90		1	140		0	190		9	240		0	290		0	340		1	390		0	440		0	490			
	0	41		0	91		0	141		2	191		5	241		0	291		0	341		2	391		0	441		0	491			
	0	42		0	92		0	142		0	192		11	242		0	292		0	342		2	392		0	442		0	492			
	0	43		0	93		0	143		0	193		15	243		0	293		0	343		2	393		0	443		0	493			
	0	44		0	94		0	144		0	194		15	244		0	294		0	344		2	394		0	444		0	494			
	0	45		0	95		0	145		1	195		5	245		0	295		0	345		4	395		0	445		0	495			
	0	46		0	96		0	146		0	196		10	246		0	296		0	346		6	396		1	446		1	496			
	0	47		0	97		0	147		0	197		5	247		0	297		0	347		1	397		1	447		0	497			
	0	48		1	98		1	148		0	198		11	248		0	298		0	348		0	398		1	448		0	498			
	0	49		0	99		0	149		1	199		11	249		1	299		0	349		0	399		0	449		0	499			

0	50	0	100	0	150	1	200	4	250	0	300	0	350	0	400	0	450	0	500

VMS Peak Search Report V1.9 Generated 28-JUN-2006 07:55:33

Configuration : $DISK1:[ALP171.SAMPLE]H57121AA_270662334H.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID : H57121AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3545.58 keV End energy : 6541.22 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5058.64	519	0	58.99	259.80	216	52	1.73E-02	4.4	
2	0	5847.97	35	0	35.39	394.00	373	27	1.17E-03	16.9	
3	0	6373.33	26	0	23.60	483.41	476	13	8.68E-04	19.6	

VMS Nuclide Identification Report V3.0 Generated 28-JUN-2006 07:55:35

```
Configuration     : $DISK1:[ALP171.SAMPLE]H57121AA_270662334H.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 27-JUN-2006 23:34:15
Sample ID         : H57121AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                3
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    2       66.67%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
CM-244	18.10Y	1.01	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity :	0.000E+00	0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

```
  Error Report  (Date: 28-Jun-06  07:55 AM)

Program: Alp_rgn_cnts
subroutine: Main
Message: No trace pk or nucl
Record being processed:  7

System Status Message:

%NONAME-W-NOMSG, Message number 00000000
```

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST

1653

C.R. Technician CP
Date Counted 6/28/06
C.R. Analyst CP
Date Analyzed 6/28/06

Counting Time
Sample 500 Minutes

Background See Alpha Analysis Report
BRC 5/10/06

SOP's
Operating: RICHRD008
Review: RICHRD0016
6/14/6/30

WorkOrder #	Th-229 (4845 KeV) Tracer from Th-234 Beta Count (7)				TOTAL COUNTS			Det #	Comment
					Th-228 (5423 KeV)	Th-230 (4688 KeV)	Th-232 (4010 KeV)		
	ID	Activity	ROI Cts	BKG	(6)	(8)	(9)		
H5713 1AA		10		0	See Alpha Analysis Report for ROI Information			171	
H5714 1AA		10		0	See Alpha Analysis Report for ROI Information			172	
H6AW 11AA		10		0	See Alpha Analysis Report for ROI Information			173	
H6AW 11AC		10		0	See Alpha Analysis Report for ROI Information			174	
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				

Comments:

Form No: RC-012, 10/02, Rev 9

Approved by: OD

Date: 6/28/06

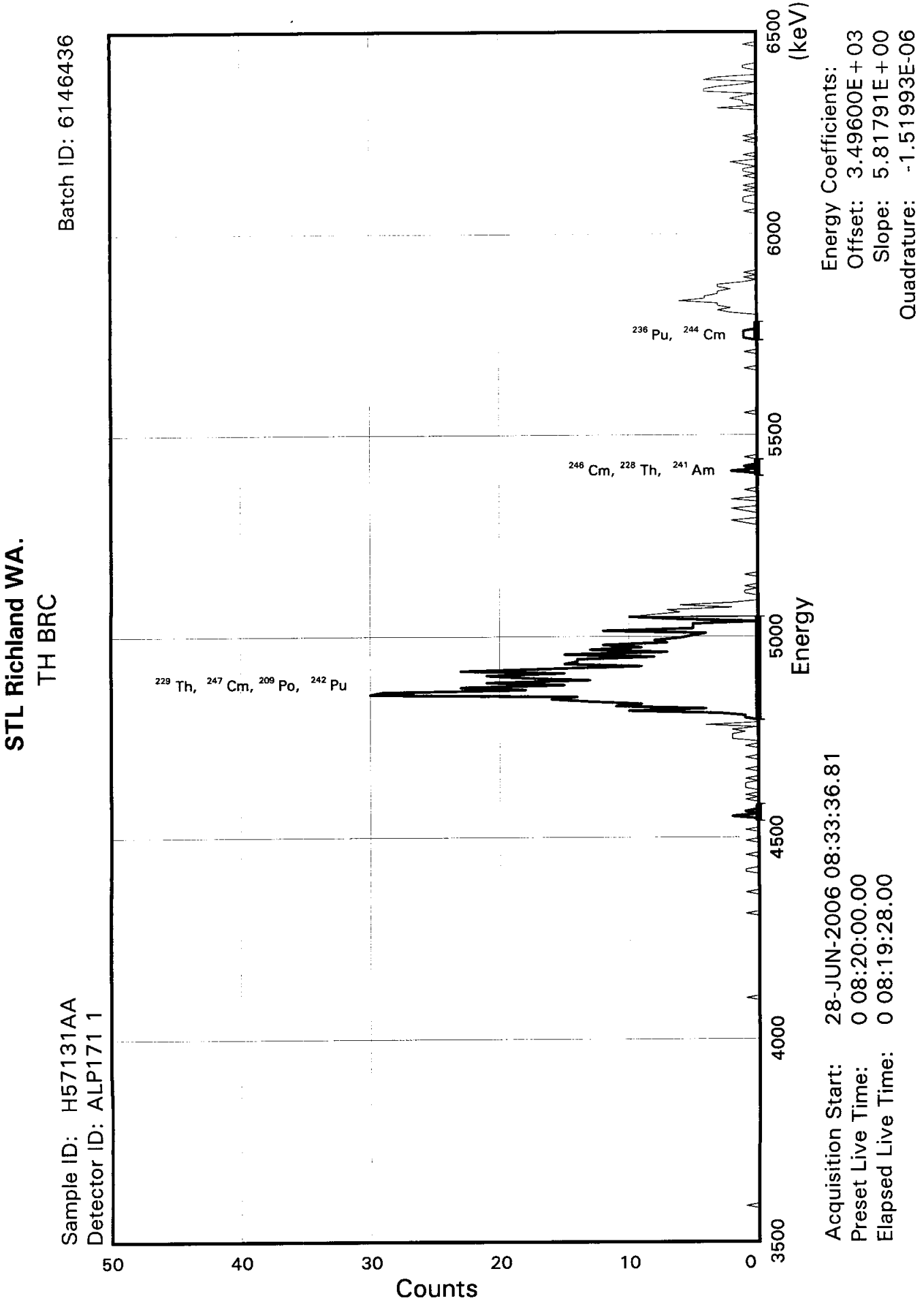
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H57131AA

Detector: ALP171 1
Report Date: 28-Jun-06 06:04 PM
Acquire Date: 28-JUN-2006 08:33:36.81
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	10	6	0.014	5423.2	151.2	311	337
TH-229	560	2	1.119	4845.3	389.7	215	282
TH-230	9	1	0.017	4687.7	151.2	188	214
TH-232	0	1	-0.001	4013.0	116.4	74	94

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6146436
Sample ID: H57131AA
Detector ID: ALP171 1
229 Th, 247 Cm, 209 Po, 242 Pu
248 Cm, 228 Th, 241 Am
236 Pu, 244 Cm
Counts
50
40
30
20
10
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 28-JUN-2006 08:33:36.81
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.49600E+03
Slope: 5.81791E+00
Quadrature: -1.51993E-06

SAMPLE IDENTITY: H57131AA

TITLE : TH BRC

DETECTOR : ALP171 1
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H57131AA_280660833A.CN
F;1
ACQUIRE DATE of BACKGROUND: 10-JUN-2006 06:49:56

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 08:33:36 CALIB DATE : 09-JUN-2006 02:56:15

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3496.00 keV CONSTANT FWHM : 8.50000 Channels
SLOPE : 5.81791 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.151993E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H57131AA

Detector: ALP171 1
Report Date: 28-Jun-06 04:54 PM
Acquire Date: 28-JUN-2006 08:33:36.81
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5154.0	255.9	269	313	0.00	0.00	M
PO-209	501	1	0	1.002	4922.3	256.0	223	267	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5343.5	255.9	302	346	0.00	0.00	M I
AC-227	8	2	14	0.014	6077.1	255.9	428	472	0.00	0.00	S
TH-227	8	2	14	0.014	6077.1	255.9	428	472	0.00	0.00	S
TH-228	4	2	0	0.006	5462.3	40.7	327	334	0.00	0.00	P
TH-229	501	1	0	1.002	4884.4	256.0	223	267	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4726.8	256.0	196	240	0.00	0.00	M I
TH-232	1	2	0	0.000	4052.1	256.0	80	124	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5359.3	255.9	305	349	0.00	0.00	M I
U-234	-9999	-9999	0	-10.010	4813.7	256.0	211	255	0.00	0.00	M I
U-235	10	2	1	0.017	4436.9	256.0	146	190	0.00	0.00	S
PU-236	4	5	0	0.003	5806.8	46.5	385	393	0.00	0.00	P
NP-237	-9999	-9999	0	-10.010	4827.1	256.0	213	257	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5538.2	255.9	335	379	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4237.1	256.0	112	156	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5195.7	255.9	277	321	0.00	0.00	M
AM-241	4	2	0	0.006	5524.7	40.7	327	334	0.00	0.00	P
AM-242M	-9999	-9999	0	-10.010	5245.9	255.9	285	329	0.00	0.00	M I
CM-242	-9999	-9999	0	-10.010	6151.8	255.9	441	485	0.00	0.00	M
PU-242	501	1	0	1.002	4939.6	256.0	223	267	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5314.4	255.9	297	341	0.00	0.00	M I
CM-244	4	5	0	0.003	5843.9	46.5	385	393	0.00	0.00	P
CM-246	4	2	0	0.006	5425.6	40.7	327	334	0.00	0.00	P
CM-247	501	1	0	1.002	4909.5	256.0	223	267	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5117.7	256.0	263	307	0.00	0.00	M I

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H57131AA
Detector: ALP171 1
Report Date: 28-Jun-06 04:54 PM
Acquire Date: 28-JUN-2006 08:33:36.81

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0	@	151	0	+	201	15	@	251	0	@	301	0	-	351	3		401
		2	0		52	0	+	102	0	@	152	1	+	202	7	@	252	0	@	302	0	-	352	6		402
0		3	0		53	0	+	103	0	@	153	0	+	203	13	@	253	0	@	303	0	-	353	4		403
0		4	0		54	1	+	104	0	@	154	0	+	204	9	@	254	0	@	304	1	-	354	4		404
0		5	0		55	0	+	105	0	@	155	0	+	205	12	@	255	0	@	305	0	-	355	3		405
0		6	0		56	0	+	106	0	@	156	0	+	206	7	@	256	0	@	306	0	-	356	3		406
0		7	0		57	0	+	107	0	+	157	1	+	207	8	@	257	1	@	307	0	-	357	2		407
0		8	0		58	0	+	108	1	+	158	0	+	208	6	@	258	2	@	308	0	-	358	3		408
0		9	0		59	0	+	109	1	+	159	0	+	209	5	@	259	0	@	309	0	-	359	3		409
0		10	0		60	0	+	110	0	+	160	0	+	210	4	@	260	0	@	310	0	-	360	1		410
0		11	0		61	0	+	111	0	+	161	0	@	211	12	@	261	0	@	311	0	-	361	0		411
0		12	0		62	0	@	112	0	+	162	1	@	212	5	@	262	1	@	312	0	-	362	1		412
0		13	0		63	0	@	113	0	+	163	0	-	213	5	-	263	2	@	313	0	-	363	0		413
0		14	0		64	0	@	114	0	+	164	0	@	214	5	@	264	0	@	314	0	-	364	1		414
0		15	0		65	0	@	115	1	+	165	2	@	215	0	@	265	0	@	315	0	-	365	0		415
1		16	0		66	0	@	116	0	+	166	2	@	216	6	@	266	0	@	316	0	-	366	0		416
0		17	0		67	0	@	117	0	+	167	2	@	217	10	-	267	2	@	317	0	-	367	0		417
0		18	0		68	0	@	118	0	+	168	1	@	218	8	-	268	0	@	318	0	-	368	0		418
0		19	0		69	0	@	119	0	+	169	2	@	219	6	@	269	0	@	319	0	-	369	0		419
0		20	0		70	0	@	120	0	+	170	0	@	220	7	@	270	0	@	320	0	-	370	0		420
0		21	0		71	0	@	121	1	+	171	4	@	221	2	@	271	1	@	321	0	-	371	0		421
0		22	0		72	0	@	122	0	+	172	0	@	222	6	@	272	0	@	322	0	-	372	0		422
0		23	0		73	0	@	123	0	+	173	0	@	223	2	@	273	0	@	323	1	-	373	0		423
0		24	0		74	0	@	124	0	+	174	1	@	224	0	@	274	0	@	324	0	-	374	0		424
0		25	0		75	0	-	125	0	+	175	1	@	225	0	@	275	0	@	325	0	-	375	0		425
0		26	0		76	0	-	126	1	+	176	3	@	226	0	@	276	0	@	326	0	-	376	0		426
0		27	0		77	0	-	127	0	+	177	10	@	227	1	@	277	0	-	327	0	-	377	0		427
0		28	0		78	0	-	128	0	+	178	4	@	228	1	@	278	0	@	328	0	-	378	0	@	428
0		29	0		79	0	-	129	0	+	179	11	@	229	0	@	279	2	@	329	0	-	379	0	@	429
0		30	0	+	80	0	-	130	0	+	180	9	@	230	1	@	280	0	@	330	1		380	0	@	430
0		31	0	+	81	0	-	131	0	+	181	13	@	231	0	@	281	1	@	331	0		381	0	@	431
0		32	0	+	82	0	-	132	2	+	182	16	@	232	0	@	282	0	@	332	0		382	0	@	432
0		33	0	+	83	0	-	133	0	+	183	14	@	233	0	@	283	0	@	333	0		383	0	@	433
0		34	0	+	84	0	-	134	1	+	184	30	@	234	0	@	284	0	@	334	0		384	0	@	434
0		35	0	+	85	0	-	135	0	+	185	29	@	235	1	@	285	1	@	335	0	@	385	0	@	435
0		36	0	+	86	0	-	136	0	+	186	18	@	236	0	@	286	0	@	336	1	@	386	0	@	436
0		37	0	+	87	0	-	137	0	+	187	23	@	237	0	@	287	0	@	337	1	@	387	0	@	437
0		38	0	+	88	0	-	138	0	+	188	15	@	238	0	@	288	0	@	338	1	@	388	0	@	438
0		39	0	+	89	0	-	139	1	+	189	21	@	239	0	@	289	0	@	339	1	@	389	0	@	439
0		40	0	+	90	1	-	140	0	+	190	13	@	240	0	@	290	0	@	340	0	@	390	1	@	440
0		41	0	+	91	0	-	141	1		191	18	@	241	0	@	291	0	@	341	0	@	391	0	-	441
0		42	0	+	92	0	-	142	0		192	21	@	242	0	@	292	0	@	342	0	@	392	0	@	442
0		43	0	+	93	0	-	143	0		193	15	@	243	0	@	293	0	@	343	0		393	0	@	443
0		44	0	+	94	0	-	144	1		194	23	@	244	0	@	294	0	@	344	0		394	1	@	444
0		45	0	+	95	0	-	145	1		195	16	@	245	0	@	295	0	@	345	0		395	1	@	445
0		46	0	+	96	0	@	146	1	+	196	9	@	246	0	@	296	0	@	346	0		396	1	@	446
0		47	0	+	97	0	@	147	0	+	197	15	@	247	0	@	297	0	@	347	2		397	0	@	447
0		48	0	+	98	0	@	148	1	+	198	14	@	248	0	@	298	0	@	348	3		398	0	@	448
0		49	0	+	99	1	@	149	0	+	199	14	@	249	0	@	299	0	@	349	2		399	1	@	449
0		50	0	+	100	0	@	150	0	+	200	8	@	250	0	@	300	0	-	350	3		400	0	@	450

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		451	1		501																		
		452	1		502																		
		453	0		503																		
		454	0		504																		
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VMS Peak Search Report V1.9 Generated 28-JUN-2006 16:54:10

Configuration : $DISK1:[ALP171.SAMPLE]H57131AA_280660833A.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 08:33:36
Sample ID : H57131AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3513.45 keV End energy : 6474.37 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4557.72	4	0	23.27	182.50	180	7	1.33E-04	50.0	
2	0	4884.42	501	0	98.90	238.66	223	44	1.67E-02	4.5	
3	0	5412.83	4	0	23.27	329.50	327	7	1.33E-04	50.0	
4	0	5750.21	4	0	23.27	387.50	385	8	1.33E-04	50.0	

VMS Nuclide Identification Report V3.0 Generated 28-JUN-2006 16:54:13

Configuration	: $DISK1:[ALP171.SAMPLE]H57131AA_280660833A.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.3		
Sample title	: TH BRC		
Sample date	: 10-MAY-2006 12:00:00	Acquisition date	: 28-JUN-2006 08:33:36
Sample ID	: H57131AA	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP171 1	Detector geometry	:
Elapsed live time	: 0 08:19:28.00	Elapsed real time	: 0 08:19:28.00 0.0%
Energy tolerance	: 80.00 keV	Half life ratio	: 1.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Spline	Efficiencies at	: Peak Energy
Abundance limit	: 70.00		

Summary of Nuclide Activity

Total number of lines in spectrum	4	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	3	75.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
TH-228	1.91Y	1.05	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-246	8500.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-236	2.86Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-241	432.20Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-244	18.10Y	1.01	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H57131AA_280660833A.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4557.71	180	187	4	3	0.50		
4884.42	223	267	501	513	-0.54		
5412.83	327	334	4	3	0.50		
5750.20	385	393	4	4	0.00		

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H57141AA

Detector: ALP171 2
Report Date: 28-Jun-06 06:05 PM
Acquire Date: 28-JUN-2006 08:33:36.81
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	4	0.000	5423.2	112.9	320	340
TH-229	472	4	0.941	4845.3	378.6	215	282
TH-230	3	1	0.005	4687.7	135.7	190	214
TH-232	0	0	0.000	4013.0	113.2	70	90

End of Alpha Region Report
(Produced by ANAL Report)

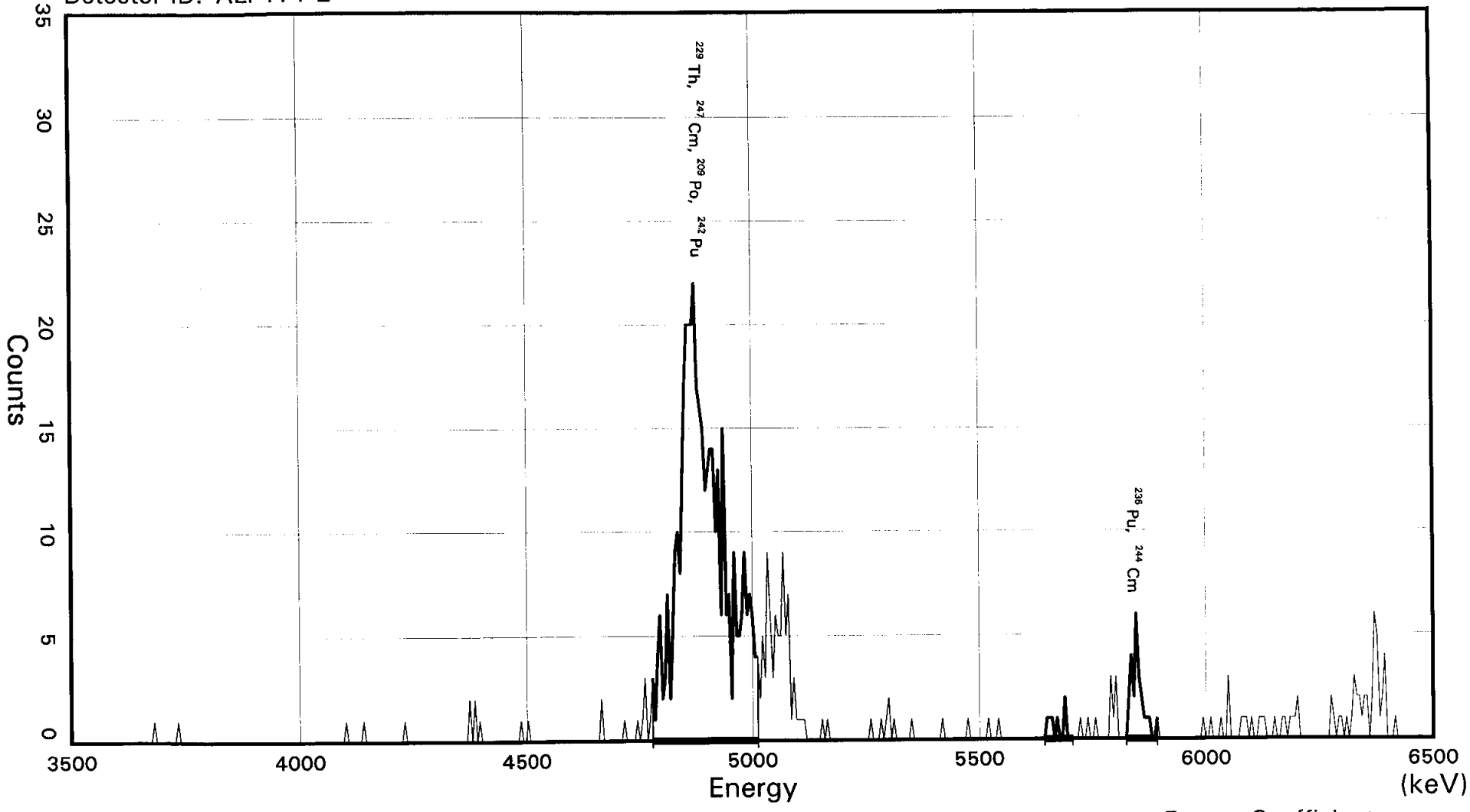
STL Richland WA.

TH BRC

Sample ID: H57141AA

Detector ID: ALP171 2

Batch ID: 6146436



Acquisition Start: 28-JUN-2006 08:33:36.81

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.52894E+03

Slope: 5.66647E+00

Quadrature: -3.05585E-05

SAMPLE IDENTIITY: H57141AA

TITLE : TH BRC

DETECTOR : ALP171 2
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H57141AA_280660833B.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 08:33:36 CALIB DATE : 09-JUN-2006 02:56:29

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3528.94 keV CONSTANT FWHM : 10.00000 Channels
SLOPE : 5.66647 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.305585E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H57141AA

Detector: ALP171 2
Report Date: 28-Jun-06 04:54 PM
Acquire Date: 28-JUN-2006 08:33:36.81
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5153.4	231.6	269	310	0.00	0.00	M
PO-209	403	3	0	0.804	4921.7	231.7	221	262	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5342.9	231.5	302	343	0.00	0.00	M
AC-227	12	5	18	0.019	6076.5	231.2	432	473	0.00	0.00	S
TH-227	12	5	18	0.019	6076.5	231.2	432	473	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5461.7	231.5	323	364	0.00	0.00	M
TH-229	403	3	0	0.804	4883.8	231.7	221	262	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4726.2	231.8	193	234	0.00	0.00	M I
TH-232	2	3	1	0.000	4051.5	232.1	74	115	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5358.7	231.5	305	346	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4813.1	231.8	208	249	0.00	0.00	M I
U-235	7	2	0	0.012	4436.3	231.9	142	183	0.00	0.00	S
PU-236	22	27	0	0.017	5806.2	67.7	406	418	0.00	0.00	P
NP-237	-9999	-9999	0	-10.010	4826.5	231.7	211	252	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5537.5	231.4	337	378	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4236.5	232.0	107	148	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5195.1	231.6	276	317	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5524.1	231.4	334	375	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5245.3	231.6	285	326	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6151.2	236.8	445	487	0.00	0.00	M
PU-242	403	3	0	0.804	4939.0	231.7	221	262	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5313.8	231.5	297	338	0.00	0.00	M
CM-244	22	27	0	0.017	5843.3	67.7	406	418	0.00	0.00	P
CM-246	-9999	-9999	0	-10.010	5425.0	231.5	317	358	0.00	0.00	M
CM-247	403	3	0	0.804	4908.9	231.7	221	262	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5117.1	231.6	262	303	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H57141AA
Detector: ALP171 2
Report Date: 28-Jun-06 04:54 PM
Acquire Date: 28-JUN-2006 08:33:36.81

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	1	+	101	2	+	151	2	+	201	7	@	251	0	@	301	0	@	351	1		401
		2	0		52	0	+	102	0	+	152	0	+	202	2	@	252	0	@	302	1	@	352	3		402
0		3	0		53	0	+	103	1	+	153	0	+	203	9	@	253	0	@	303	0	@	353	0		403
0		4	0		54	0	+	104	0	+	154	0	+	204	5	@	254	0	@	304	0	@	354	0		404
0		5	0		55	0	+	105	0	+	155	0	+	205	5	@	255	0	@	305	0	@	355	0		405
0		6	0		56	0	+	106	0	+	156	0	+	206	6	@	256	1	@	306	1	@	356	0	@	406
0		7	0		57	0	@	107	0	+	157	0	+	207	9	@	257	0	@	307	0	@	357	2	@	407
0		8	0		58	1	@	108	0	+	158	0	@	208	6	@	258	0	@	308	0	@	358	4	@	408
0		9	0		59	0	@	109	0	+	159	0	@	209	7	@	259	0	@	309	0	@	359	2	@	409
0		10	0		60	0	@	110	0	+	160	1	@	210	6	@	260	1	@	310	0	@	360	6	@	410
0		11	0		61	0	@	111	0	+	161	0	-	211	4	@	261	0	@	311	0	@	361	3	@	411
0		12	0		62	0	@	112	0	+	162	0	@	212	4	+	262	1	@	312	0	@	362	2	@	412
0		13	0		63	0	@	113	0	+	163	0	@	213	2	+	263	2	@	313	0	@	363	1	@	413
0		14	0		64	0	@	114	0	+	164	0	@	214	5	+	264	0	@	314	0	@	364	1	@	414
0		15	0		65	0	@	115	0	+	165	1	@	215	3	+	265	1	@	315	0	@	365	1	@	415
0		16	0		66	0	-	116	0	+	166	0	@	216	9	+	266	0	@	316	0	@	366	0	@	416
0		17	0		67	0	-	117	0	+	167	1	@	217	6	+	267	0	-	317	0	@	367	0	@	417
0		18	0		68	0	-	118	0	+	168	3	@	218	3	+	268	0	@	318	0	@	368	1		418
0		19	0		69	0	-	119	1	+	169	0	@	219	6	@	269	0	@	319	0	@	369	0		419
0		20	0		70	0	-	120	0	+	170	1	@	220	5	@	270	0	@	320	0	@	370	0		420
0		21	0		71	0	-	121	0	+	171	3	@	221	5	@	271	0	@	321	0	@	371	0		421
0		22	0		72	0	-	122	1	+	172	1	@	222	9	@	272	1	@	322	0	@	372	0		422
0		23	0		73	0	-	123	0	+	173	4	@	223	5	@	273	0	@	323	0	@	373	0		423
0		24	0	+	74	1	-	124	0	+	174	6	@	224	7	@	274	0	@	324	0	@	374	0		424
0		25	0	+	75	0	-	125	0	+	175	2	@	225	1	@	275	0	@	325	1	@	375	0		425
0		26	0	+	76	0	-	126	0	+	176	3	@	226	3	@	276	0	@	326	1	+	376	0		426
1		27	0	+	77	0	-	127	0	+	177	7	@	227	1	@	277	0	@	327	1	+	377	0		427
0		28	0	+	78	0	-	128	0	+	178	2	@	228	1	@	278	0	@	328	0	+	378	0		428
0		29	0	+	79	0	-	129	0	+	179	5	@	229	1	@	279	0	@	329	1		379	0		429
0		30	0	+	80	0	-	130	0	+	180	9	@	230	1	@	280	0	@	330	0		380	0		430
0		31	0	+	81	0	-	131	0	+	181	10	@	231	0	@	281	0	@	331	0		381	0		431
0		32	0	+	82	0	-	132	0	+	182	8	@	232	0	@	282	0	@	332	2		382	0	@	432
0		33	0	+	83	0	-	133	0	+	183	13	@	233	0	@	283	0	@	333	0		383	0	@	433
0		34	0	+	84	0	-	134	0		184	17	@	234	0	@	284	1	@	334	0		384	0	@	434
0		35	0	+	85	0	-	135	0		185	20	@	235	0	@	285	0	@	335	0		385	0	@	435
1		36	0	+	86	0	-	136	0		186	20	@	236	0	@	286	0	@	336	0		386	1	@	436
0		37	0	+	87	0	-	137	0		187	20	@	237	1	@	287	0	@	337	0		387	0	@	437
0		38	0	+	88	0	-	138	0		188	22	@	238	0	@	288	0	@	338	1		388	0	@	438
0		39	0	+	89	0	-	139	0		189	17	@	239	1	@	289	0	@	339	0		389	1	@	439
0		40	0	+	90	0	-	140	0		190	16	@	240	0	@	290	0	@	340	0		390	0	@	440
0		41	0	+	91	0	-	141	0		191	15	@	241	0	@	291	0	@	341	1		391	0	@	441
0		42	0	+	92	0	@	142	0		192	12	@	242	0	@	292	0	@	342	0		392	0	@	442
0		43	0	+	93	0	@	143	0	+	193	13	@	243	0	@	293	0	@	343	0		393	1	@	443
0		44	0	+	94	0	@	144	0	+	194	14	@	244	0	@	294	1	@	344	1		394	0	@	444
0		45	0	+	95	0	@	145	0	+	195	14	@	245	0	@	295	0	@	345	0		395	0	-	445
0		46	0	+	96	0	@	146	0	+	196	10	@	246	0	@	296	0	@	346	0		396	3	@	446
0		47	0	+	97	0	@	147	0	+	197	13	@	247	0	@	297	0	@	347	0		397	0	@	447
0		48	0	+	98	0	@	148	0	+	198	6	@	248	0	@	298	0	@	348	0		398	0	@	448
0		49	0	+	99	2	+	149	0	+	199	15	@	249	0	@	299	0	@	349	0		399	0	@	449
0		50	0	+	100	0	+	150	0	+	200	6	@	250	0	@	300	0	@	350	3		400	0	@	450

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
0		501	1	@	451	1		401	0		501
2		502	1	@	452	3		402	2		502
6		503	1	@	453	0		403	6		503
5		504	0	@	454	0		404	5		504
1		505	1	@	455	0		405	1		505
2		506	0	@	456	0	@	406	2		506
4		507	0	@	457	2	@	407	4		507
0		508	1	@	458	4	@	408	0		508
0		509	1	@	459	2	@	409	0		509
0		510	1	@	460	6	@	410	0		510
1		511	0	@	461	3	@	411	1		511
0		512	0	@	462	2	@	412	0		512
			0	@	463	1	@	413			
			1	@	464	1	@	414			
			0	@	465	1	@	415			
			0	@	466	0	@	416			
			1	@	467	0	@	417			
			1	@	468	1		418			
			0	@	469	0		419			
			1	@	470	0		420			
			1	@	471	0		421			
			1	@	472	0		422			
			2	@	473	0		423			
			0	-	474	0		424			
			0	-	475	0		425			
			0	-	476	0		426			
			0	-	477	0		427			
			0	-	478	0		428			
			0	-	479	0		429			
			0	-	480	0		430			
			0	-	481	0		431			
			0	-	482	0	@	432			
			0	-	483	0	@	433			
			0	-	484	0	@	434			
			0	-	485	0	@	435			
			2	-	486	1	@	436			
			1	-	487	0	@	437			
			0		488	0	@	438			
			1		489	1	@	439			
			1		490	0	@	440			
			0		491	0	@	441			
			1		492	0	@	442			
			0		493	1	@	443			
			1		494	0	@	444			
			3		495	0	-	445			
			2		496	3	@	446			
			2		497	0	@	447			
			1		498	0	@	448			
			2		499	0	@	449			
			2		500	0	@	450			

VMS Peak Search Report V1.9 Generated 28-JUN-2006 16:54:17

Configuration : $DISK1:[ALP171.SAMPLE]H57141AA_280660833B.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 08:33:36
Sample ID : H57141AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3545.94 keV End energy : 6422.16 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4883.81	403	0	96.33	239.41	221	41	1.34E-02	5.0	
2	0	5669.32	8	0	45.33	378.50	374	11	2.67E-04	35.4	
3	0	5842.47	22	0	28.33	409.19	406	12	7.34E-04	21.3	

VMS Nuclide Identification Report V3.0 Generated 28-JUN-2006 16:54:21

```
Configuration     : $DISK1:[ALP171.SAMPLE]H57141AA_280660833B.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 08:33:36
Sample ID         : H57141AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

Total number of lines in spectrum	3	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	2	66.67%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-236	2.86Y	1.03	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-244	18.10Y	1.01	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H57141AA_280660833B.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4883.80	221	262	403	393	0.50		
5669.31	374	385	8	6	0.71		
5842.46	406	418	22	23	-0.21		

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H6AW11AA

Detector: ALP171 3
Report Date: 28-Jun-06 06:06 PM
Acquire Date: 28-JUN-2006 08:33:36.81
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	1	0.003	5423.2	119.4	309	329
TH-229	435	0	0.871	4845.3	369.8	210	272
TH-230	6	1	0.011	4687.7	131.1	185	207
TH-232	0	1	-0.001	4013.0	119.0	72	92

End of Alpha Region Report
(Produced by ANAL Report)

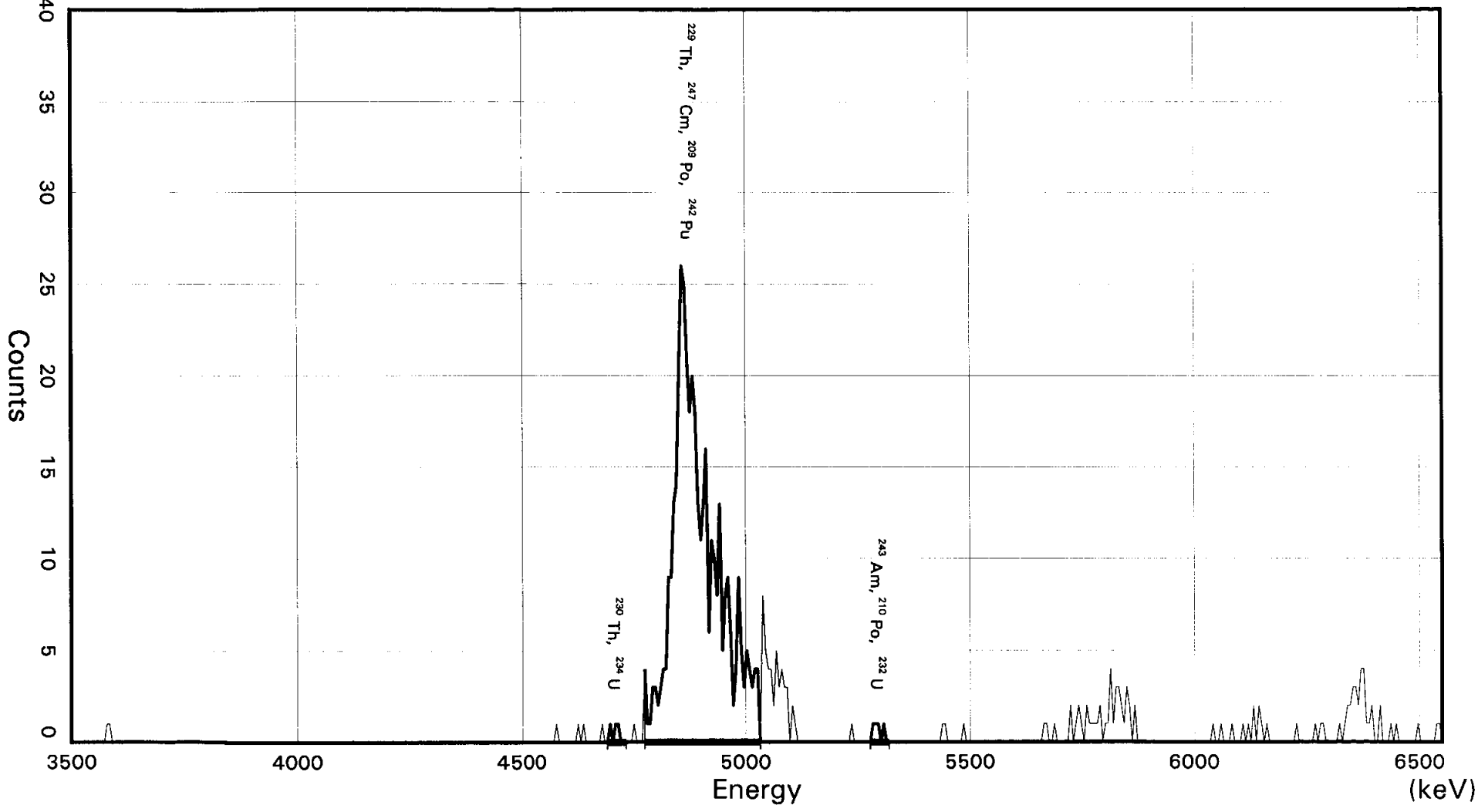
STL Richland WA.

TH BRC

Sample ID: H6AW11AA

Detector ID: ALP171 3

Batch ID: 6146436



Acquisition Start: 28-JUN-2006 08:33:36.81

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.49562E+03

Slope: 5.94301E+00

Quadrature: 4.47075E-05

SAMPLE IDENTITY: H6AW11AA

TITLE : TH BRC

DETECTOR : ALP171 3
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H6AW11AA_280660833C.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 08:33:36 CALIB DATE : 09-JUN-2006 02:56:42

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3495.62 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 5.94301 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 4.470750E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H6AW11AA

Detector: ALP171 3
Report Date: 28-Jun-06 04:54 PM
Acquire Date: 28-JUN-2006 08:33:36.81
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5141.7	256.6	260	303	0.00	0.00	M I
PO-209	384	0	0	0.769	4910.0	256.5	215	258	0.00	0.00	P
PO-210	4	1	0	0.007	5331.2	41.8	299	306	0.00	0.00	P
AC-227	-9999	-9999	0	-10.010	6064.9	257.2	415	458	0.00	0.00	M
TH-227	-9999	-9999	0	-10.010	6064.9	257.2	415	458	0.00	0.00	M
TH-228	-9999	-9999	0	-10.010	5450.0	256.8	312	355	0.00	0.00	M
TH-229	384	0	0	0.769	4872.1	256.5	215	258	0.00	0.00	P
TH-230	4	0	0	0.008	4714.5	41.7	201	208	0.00	0.00	P
TH-232	0	1	0	-0.001	4039.8	255.9	75	118	0.00	0.00	S
U-232	4	1	0	0.007	5347.0	41.8	299	306	0.00	0.00	P
U-234	4	0	0	0.008	4801.4	41.7	201	208	0.00	0.00	P
U-235	1	0	0	0.002	4424.6	256.2	140	183	0.00	0.00	S
PU-236	20	19	35	0.020	5794.5	251.1	370	412	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4814.8	256.4	205	248	0.00	0.00	I
PU-238	-9999	-9999	0	-10.010	5525.9	250.9	325	367	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4224.8	256.0	106	149	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5183.4	256.7	267	310	0.00	0.00	M I
AM-241	-9999	-9999	0	-10.010	5512.4	256.9	322	365	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5233.6	256.7	276	319	0.00	0.00	M I
CM-242	-9999	-9999	0	-10.010	6139.6	257.3	427	470	0.00	0.00	M
PU-242	384	0	0	0.769	4927.3	256.5	215	258	0.00	0.00	P
AM-243	4	1	0	0.007	5302.1	41.8	299	306	0.00	0.00	P
CM-244	-9999	-9999	0	-10.010	5831.7	257.1	376	419	0.00	0.00	M
CM-246	-9999	-9999	0	-10.010	5413.3	256.8	306	349	0.00	0.00	M
CM-247	384	0	0	0.769	4897.2	256.5	215	258	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5105.4	256.6	254	297	0.00	0.00	M I

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H6AW11AA
Detector: ALP171 3
Report Date: 28-Jun-06 04:54 PM
Acquire Date: 28-JUN-2006 08:33:36.81

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1		0	51		0	101		0	151		0	201		5	251		1	301		0	351		0	401		0	451		0	501
		2		0	52		0	102		0	152		1	202		3	252		1	302		0	352		0	402		0	452		0	502
	0	3		0	53		0	103		0	153		0	203		5	253		0	303		0	353		0	403		0	453		1	503
	0	4		0	54		0	104		0	154		1	204		4	254		1	304		0	354		0	404		0	454		0	504
	0	5		0	55		0	105		0	155		1	205		3	255		0	305		0	355		0	405		0	455		0	505
	0	6		0	56		0	106		0	156		0	206		4	256		0	306		0	356		0	406		0	456		0	506
	0	7		0	57		0	107		0	157		0	207		4	257		0	307		0	357		0	407		0	457		0	507
	0	8		0	58		0	108		0	158		0	208		0	258		0	308		0	358		0	408		1	458		0	508
	0	9		0	59		0	109		0	159		0	209		8	259		0	309		0	359		0	409		0	459		0	509
	0	10		0	60		0	110		0	160		0	210		5	260		0	310		0	360		0	410		0	460		1	510
	0	11		0	61		0	111		0	161		1	211		4	261		0	311		0	361		0	411		0	461		1	511
	0	12		0	62		0	112		0	162		0	212		4	262		0	312		0	362		0	412		0	462		0	512
	0	13		0	63		0	113		0	163		0	213		2	263		0	313		0	363		0	413		0	463			
	1	14		0	64		0	114		0	164		0	214		5	264		0	314		1	364		0	414		0	464			
	1	15		0	65		0	115		0	165		4	215		3	265		0	315		1	365		0	415		1	465			
	0	16		0	66		0	116		0	166		1	216		4	266		0	316		0	366		0	416		0	466			
	0	17		0	67		0	117		0	167		1	217		3	267		0	317		0	367		0	417		1	467			
	0	18		0	68		0	118		0	168		3	218		3	268		0	318		1	368		0	418		1	468			
	0	19		0	69		0	119		0	169		3	219		0	269		0	319		0	369		0	419		0	469			
	0	20		0	70		0	120		0	170		2	220		2	270		0	320		0	370		0	420		0	470			
	0	21		0	71		0	121		0	171		3	221		1	271		0	321		0	371		0	421		0	471			
	0	22		0	72		0	122		0	172		4	222		0	272		0	322		0	372		0	422		0	472			
	0	23		0	73		0	123		0	173		4	223		0	273		0	323		0	373		0	423		0	473			
	0	24		0	74		0	124		0	174		9	224		0	274		0	324		2	374		0	424		1	474			
	0	25		0	75		0	125		0	175		9	225		0	275		0	325		0	375		0	425		0	475			
	0	26		0	76		0	126		0	176		13	226		0	276		1	326		1	376		0	426		1	476			
	0	27		0	77		0	127		0	177		14	227		0	277		1	327		2	377		1	427		2	477			
	0	28		0	78		0	128		0	178		20	228		0	278		0	328		1	378		0	428		2	478			
	0	29		0	79		0	129		0	179		26	229		0	279		0	329		0	379		0	429		3	479			
	0	30		0	80		0	130		0	180		25	230		0	280		0	330		2	380		1	430		3	480			
	0	31		0	81		0	131		0	181		21	231		0	281		0	331		1	381		0	431		2	481			
	0	32		0	82		0	132		1	182		18	232		0	282		0	332		1	382		0	432		4	482			
	0	33		0	83		0	133		0	183		20	233		0	283		0	333		1	383		0	433		4	483			
	0	34		0	84		0	134		0	184		18	234		0	284		1	334		1	384		1	434		1	484			
	0	35		0	85		0	135		0	185		13	235		0	285		0	335		2	385		0	435		1	485			
	0	36		0	86		0	136		0	186		11	236		0	286		0	336		0	386		0	436		2	486			
	0	37		0	87		0	137		0	187		13	237		0	287		0	337		1	387		0	437		0	487			
	0	38		0	88		0	138		0	188		16	238		0	288		0	338		1	388		1	438		0	488			
	0	39		0	89		0	139		0	189		6	239		0	289		0	339		4	389		0	439		2	489			
	0	40		0	90		0	140		1	190		11	240		0	290		0	340		1	390		1	440		0	490			
	0	41		0	91		0	141		0	191		10	241		0	291		0	341		3	391		0	441		0	491			
	0	42		0	92		0	142		1	192		8	242		1	292		0	342		3	392		2	442		0	492			
	0	43		0	93		0	143		0	193		13	243		0	293		0	343		2	393		0	443		1	493			
	0	44		0	94		0	144		0	194		5	244		0	294		0	344		1	394		2	444		0	494			
	0	45		0	95		0	145		0	195		8	245		0	295		0	345		3	395		1	445		1	495			
	0	46		0	96		0	146		0	196		9	246		0	296		0	346		2	396		0	446		0	496			
	0	47		0	97		0	147		0	197		6	247		0	297		0	347		0	397		1	447		0	497			
	0	48		0	98		0	148		0	198		2	248		0	298		0	348		2	398		0	448		0	498			
	0	49		0	99		0	149		1	199		4	249		0	299		0	349		0	399		0	449		0	499			
	0	50		0	100		0	150		0	200		9	250		1	300		0	350		0	400		0	450		0	500			

VMS Peak Search Report V1.9 Generated 28-JUN-2006 16:54:25

Configuration : $DISK1:[ALP171.SAMPLE]H6AW11AA_280660833C.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 08:33:36
Sample ID : H6AW11AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3513.45 keV End energy : 6550.16 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4706.87	4	0	23.77	203.50	201	7	1.33E-04	50.0	
2	0	4872.15	384	0	71.32	231.22	215	43	1.28E-02	5.1	
3	0	5291.50	4	0	23.77	301.50	299	7	1.33E-04	50.0	

VMS Nuclide Identification Report V3.0 Generated 28-JUN-2006 16:54:28

Configuration : $DISK1:[ALP171.SAMPLE]H6AW11AA_280660833C.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title : TH BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 08:33:36
Sample ID : H6AW11AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Energy tolerance : 80.00 keV Half life ratio : 1.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Spline Efficiencies at : Peak Energy
Abundance limit : 70.00

Summary of Nuclide Activity

Total number of lines in spectrum	3	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	3	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-210	138.38D	1.28	0.000E+00	0.000E+00	0.000E+00	0.00	
TH-230	7.54E+04Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-234	2.45E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-243	7370.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H6AW11AA_280660833C.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4706.87	201	208	4	3	0.50		
4872.14	215	258	384	390	-0.31		
5291.49	299	306	4	4	0.00		

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H6AW11AC

Detector: ALP171 4
Report Date: 28-Jun-06 06:07 PM
Acquire Date: 28-JUN-2006 08:33:36.81
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	3	1	0.005	5423.2	122.4	305	327
TH-229	437	1	0.874	4845.3	388.8	202	272
TH-230	395	1	0.790	4687.7	172.0	169	200
TH-232	3	1	0.005	4013.0	110.6	53	73

End of Alpha Region Report
(Produced by ANAL Report)

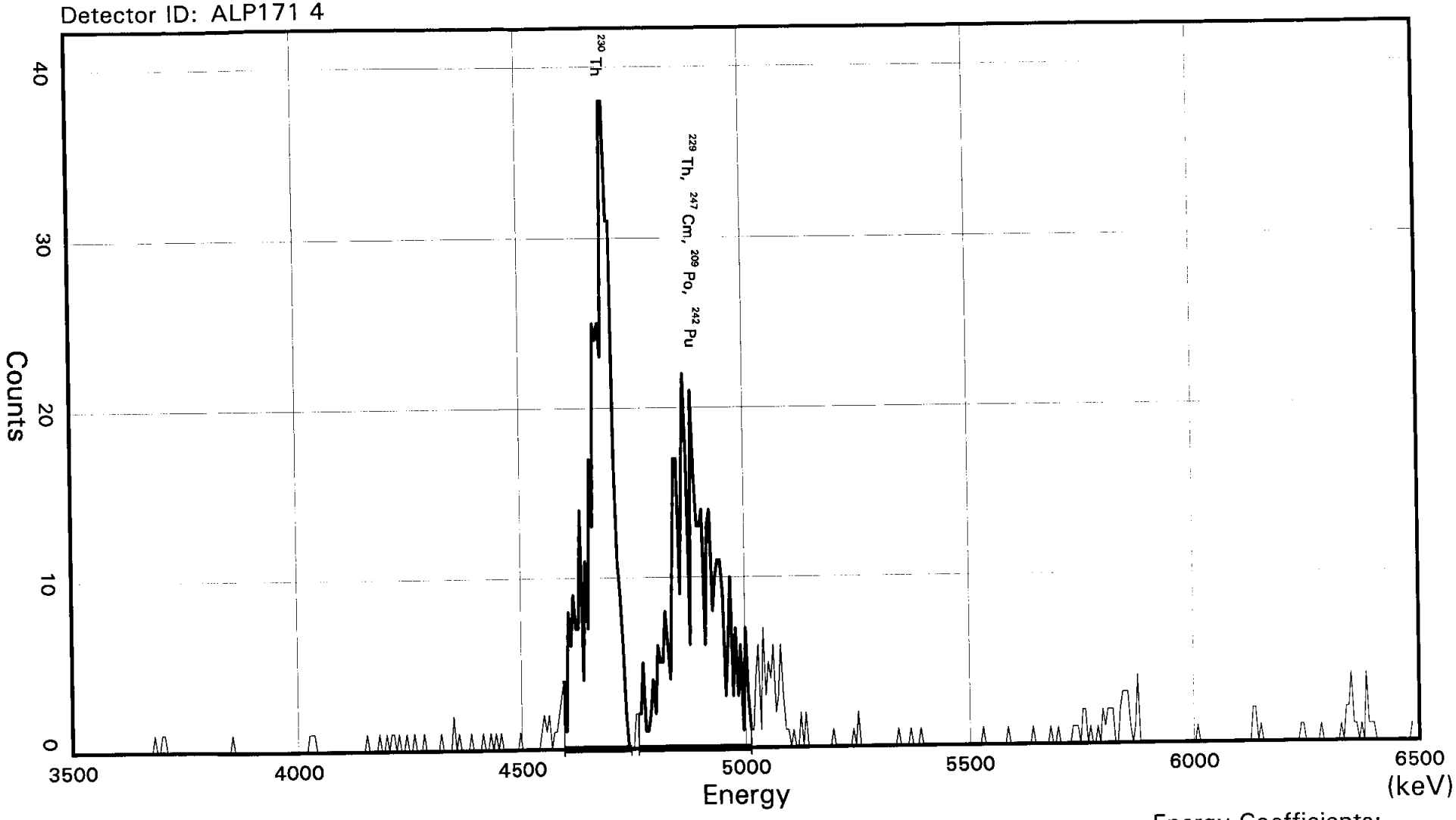
STL Richland WA.

TH BRC

Sample ID: H6AW11AC

Detector ID: ALP171 4

Batch ID: 6146436



Acquisition Start: 28-JUN-2006 08:33:36.81

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.63871E+03

Slope: 5.52245E+00

Quadrature: 6.68173E-05

SAMPLE IDENTIITY: H6AW11AC

TITLE : TH BRC

DETECTOR : ALP171 4
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H6AW11AC_280660833D.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 28-Jun-06 SAMPLE DATE: 10-MAY-2006 12:00:00
ACQUIRE DATE: 28-JUN-2006 08:33:36 CALIB DATE : 09-JUN-2006 02:56:58

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3638.71 keV CONSTANT FWHM : 11.00000 Channels
SLOPE : 5.52245 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 6.681730E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H6AW11AC

Detector: ALP171 4
Report Date: 28-Jun-06 04:54 PM
Acquire Date: 28-JUN-2006 08:33:36.81
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5159.1	244.6	252	296	0.00	0.00	M
PO-209	379	0	0	0.759	4927.4	249.9	203	248	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5348.5	250.4	286	331	0.00	0.00	M
AC-227	-9999	-9999	0	-10.010	6082.2	251.2	417	462	0.00	0.00	M
TH-227	-9999	-9999	0	-10.010	6082.2	251.2	417	462	0.00	0.00	M
TH-228	-9999	-9999	0	-10.010	5467.4	250.5	307	352	0.00	0.00	M
TH-229	379	0	0	0.759	4889.5	249.9	203	248	0.00	0.00	P
TH-230	390	1	0	0.780	4731.9	149.8	173	200	0.00	0.00	P
TH-232	4	1	2	0.007	4057.2	249.0	53	98	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5364.3	250.4	288	333	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4818.8	249.8	190	235	0.00	0.00	S I
U-235	14	2	4	0.026	4442.0	249.4	122	167	0.00	0.00	S
PU-236	19	26	35	0.012	5811.8	250.9	369	414	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4832.2	249.8	193	238	0.00	0.00	S I
PU-238	-9999	-9999	0	-10.010	5543.2	250.6	321	366	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4242.2	249.2	86	131	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5200.7	250.2	259	304	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5529.8	250.6	318	363	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5251.0	250.3	268	313	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6156.9	251.2	431	476	0.00	0.00	M
PU-242	379	0	0	0.759	4944.7	249.9	203	248	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5319.5	250.3	280	325	0.00	0.00	M
CM-244	-9999	-9999	0	-10.010	5849.0	245.3	376	420	0.00	0.00	M
CM-246	-9999	-9999	0	-10.010	5430.7	250.4	300	345	0.00	0.00	M
CM-247	379	0	0	0.759	4914.6	249.9	203	248	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5122.8	250.1	245	290	0.00	0.00	M I

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H6AW11AC
Detector: ALP171 4
Report Date: 28-Jun-06 04:54 PM
Acquire Date: 28-JUN-2006 08:33:36.81

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	1	-	101	0	+	151	0	@	201	6	-	251	0	@	301	1	@	351	0	@	401	0	@	451
		2	0		52	0	-	102	0	+	152	2	@	202	1	@	252	0	@	302	0	@	352	1	@	402	1	@	452
0		3	0	+	53	1	-	103	0	+	153	2	@	203	7	@	253	0	@	303	0	@	353	4	@	403	0	@	453
0		4	0	+	54	1	-	104	0	+	154	2	@	204	3	@	254	0	@	304	0	@	354	0	@	404	0	@	454
0		5	0	+	55	0	-	105	1	+	155	5	@	205	5	@	255	0	@	305	0	@	355	0	@	405	0	@	455
0		6	0	+	56	1	-	106	0	+	156	1	@	206	4	@	256	0	@	306	0	@	356	0	@	406	0	@	456
0		7	0	+	57	0	-	107	0	+	157	1	@	207	6	@	257	1	@	307	0	@	357	0	@	407	0	@	457
1		8	0	+	58	0	-	108	0	+	158	2	@	208	2	@	258	0	@	308	0	@	358	0	@	408	0	@	458
0		9	0	+	59	1	-	109	0	+	159	4	@	209	3	@	259	0	@	309	0	@	359	0	@	409	0	@	459
0		10	0	+	60	0	-	110	0	+	160	2	@	210	6	@	260	0	@	310	0	@	360	0	@	410	0	@	460
1		11	0	+	61	0	-	111	0	+	161	6	@	211	3	@	261	0	@	311	1	@	361	0	@	411	0	@	461
1		12	0	+	62	1	-	112	0	+	162	5	@	212	1	@	262	1	@	312	0	@	362	0	@	412	0	@	462
0		13	0	+	63	0	-	113	0	+	163	5	@	213	1	@	263	0	@	313	0	@	363	0	@	413	0	-	463
0		14	0	+	64	0	-	114	1	+	164	8	@	214	0	@	264	0	@	314	0	+	364	0	@	414	0	-	464
0		15	0	+	65	0	-	115	2	+	165	6	@	215	1	@	265	0	@	315	0	+	365	0	-	415	0	-	465
0		16	0	+	66	1	-	116	1	+	166	4	@	216	0	@	266	1	@	316	0	+	366	0	-	416	0	-	466
0		17	0	+	67	0	-	117	2	+	167	11	@	217	0	@	267	0	@	317	0		367	0	@	417	0	-	467
0		18	0	+	68	0	-	118	0		168	17	@	218	2	@	268	0	@	318	1		368	0	@	418	1	-	468
0		19	0	+	69	0	-	119	1		169	17	@	219	0	@	269	0	@	319	0	+	369	0	@	419	1	-	469
0		20	1	+	70	0	-	120	1		170	9	@	220	2	@	270	0	@	320	0	+	370	0	@	420	0	-	470
0		21	1	+	71	0	-	121	2		171	16	@	221	0	@	271	0	@	321	1	+	371	0	@	421	0	-	471
0		22	1	+	72	0	@	122	3		172	22	@	222	0	@	272	0	@	322	0	+	372	0	@	422	0	-	472
0		23	0	+	73	1	@	123	4	+	173	17	@	223	0	@	273	0	@	323	0	+	373	0	@	423	0	-	473
0		24	0	+	74	0	@	124	1	+	174	6	@	224	0	@	274	0	@	324	0	+	374	0	@	424	0	-	474
0		25	0	+	75	0	@	125	8	+	175	21	@	225	0	@	275	0	@	325	0	+	375	0	@	425	0	-	475
0		26	0	+	76	0	@	126	6	+	176	16	@	226	0	@	276	0	@	326	0	@	376	0	@	426	1	-	476
0		27	0	+	77	0	@	127	9	+	177	13	@	227	0	@	277	0	@	327	1	@	377	1	@	427	0		477
0		28	0	+	78	2	@	128	7	+	178	13	@	228	0	@	278	0	@	328	1	@	378	0	@	428	0		478
0		29	0	+	79	0	@	129	7	+	179	14	@	229	0	@	279	0	@	329	1	@	379	0	@	429	0		479
0		30	0	+	80	1	@	130	14	+	180	6	@	230	0	@	280	0	@	330	0	@	380	0	@	430	0		480
0		31	0	+	81	0	@	131	4	+	181	13	@	231	1	@	281	0	@	331	2	@	381	0	-	431	0		481
0		32	0	+	82	0	+	132	11	+	182	14	@	232	0	@	282	0	@	332	2	@	382	0	@	432	0		482
0		33	0	+	83	0	+	133	7	+	183	8	@	233	0	@	283	0	@	333	0	@	383	0	@	433	0		483
0		34	0	+	84	0	+	134	17	+	184	10	@	234	0	@	284	0	@	334	1	@	384	0	@	434	1		484
0		35	0	+	85	1	+	135	13	+	185	11	@	235	0	@	285	0	@	335	0	@	385	0	@	435	0		485
0		36	0	@	86	0	+	136	25	+	186	11	@	236	0	@	286	0	@	336	0	@	386	0	@	436	2		486
0		37	0	@	87	0	+	137	24	+	187	9	@	237	0	@	287	0	@	337	1	@	387	0	@	437	2		487
0		38	0	@	88	0	+	138	25	+	188	3	@	238	0	@	288	0	@	338	0	@	388	0	@	438	4		488
1		39	0	@	89	0	+	139	23	+	189	6	@	239	1	@	289	0	@	339	2	@	389	0	@	439	1		489
0		40	0	@	90	1	+	140	38	@	190	10	@	240	0	@	290	0	@	340	1	@	390	0	@	440	1		490
0		41	0	@	91	0	+	141	38	@	191	3	@	241	2	@	291	1	@	341	2	@	391	0	@	441	0		491
0		42	0	@	92	0	+	142	31	@	192	7	@	242	0	@	292	0	@	342	2	@	392	0	@	442	1		492
0		43	1	@	93	1	+	143	31	-	193	3	@	243	0	@	293	0	@	343	2	@	393	0	@	443	0		493
0		44	0	@	94	0	+	144	17	@	194	6	@	244	0	@	294	0	@	344	0	@	394	0	@	444	4		494
0		45	0	@	95	1	+	145	11	@	195	1	-	245	0	@	295	0	@	345	0	@	395	0	@	445	1		495
0		46	0	@	96	0	+	146	9	@	196	7	@	246	0	@	296	0	@	346	2	@	396	0	@	446	1		496
0		47	0	@	97	1	+	147	6	@	197	3	@	247	0	@	297	0	@	347	3	@	397	0	@	447	1		497
0		48	1	@	98	0	+	148	2	@	198	1	-	248	0	@	298	0	@	348	3	@	398	0	@	448	0		498
0		49	0	-	99	0	+	149	0	@	199	1	-	249	0	@	299	0	@	349	3	@	399	2	@	449	0		499
0		50	0	-	100	0	+	150	0	@	200	4	-	250	0	-	300	0	@	350	1	@	400	2	@	450	0		500

VMS Peak Search Report V1.9 Generated 28-JUN-2006 16:54:30

Configuration : $DISK1:[ALP171.SAMPLE]H6AW11AC_280660833D.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 10-MAY-2006 12:00:00 Acquisition date : 28-JUN-2006 08:33:36
Sample ID : H6AW11AC Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3655.27 keV End energy : 6483.72 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4689.19	390	0	55.22	189.78	173	27	1.30E-02	5.1	
2	0	4889.46	379	0	121.49	225.87	203	45	1.26E-02	5.1	

VMS Nuclide Identification Report V3.0 Generated 28-JUN-2006 16:54:32

Configuration	: $DISK1:[ALP171.SAMPLE]H6AW11AC_280660833D.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.3		
Sample title	: TH BRC		
Sample date	: 10-MAY-2006 12:00:00	Acquisition date	: 28-JUN-2006 08:33:36
Sample ID	: H6AW11AC	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP171 1	Detector geometry	:
Elapsed live time	: 0 08:19:28.00	Elapsed real time	: 0 08:19:28.00 0.0%
Energy tolerance	: 80.00 keV	Half life ratio	: 1.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Spline	Efficiencies at	: Peak Energy
Abundance limit	: 70.00		

Summary of Nuclide Activity

Total number of lines in spectrum	2	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	2	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
TH-230	7.54E+04Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity :	0.000E+00	0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H6AW11AC_280660833D.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4689.18	173	200	390	388	0.10		
4889.45	203	248	379	377	0.10		

End of Report

ALPHA

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/22/2006 10:11:12 AM

Lot No., Due Date: J6E250379; 06/22/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6146439; RALPHA-A Alpha by GPC-Am

SDG, Matrix: 31758; FILTER

1.0 COC

	Yes	No	N/A
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		

2.0 QC Batch

	Yes	No	N/A
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?			✓

3.0 QC & Samples

	Yes	No	N/A
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?			✓
3.5 Are the sample yields and MDAs within contract limits?	✓		

4.0 Raw Data

	Yes	No	N/A
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?			✓
4.4 Were spectra reviewed/meet contractual requirements?			✓
4.5 Were raw counts reviewed for anomalies?	✓		

5.0 Other

	Yes	No	N/A
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?	✓		
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

As noted in an earlier NCM a subtstance fell from the hood in samples HH5709. H571F. H5710. and H5711

First Level Review Pam Anderson **Date** 6-22-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 614639

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	/		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	/		
3. Are the correct isotopes reported?	/		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	/		
2. Does the blank result meet the Contract criteria?	/		
3. Is the blank result < the Contract Detection Limit?	/		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			/
5. Is the LCS recovery with contract acceptance criteria?	/		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	/		
8. Do the MS/MSD results and yields meet acceptance criteria?			/
9. Do the duplicate sample results and yields meet acceptance criteria?			/
C. Other 1. Are all Nonconformances included and noted?			/
2. Are all required forms filled out?	/		
3. Was the correct methodology used?	/		
4. Was transcription checked?	/		
5. Were all calculations checked at a minimum frequency?	/		
6. Were units checked?	/		

Comments on any "No" response: _____

Second Level Review: Sheryl A Adam Date: 6-22-06

STL RICHLAND

6/15/2006 2:36:14 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

BA Gross Alpha PrpRC5016/5014
S7 Gross Alpha by GPC using Am-241 curve
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146439 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: HansenM S 10a

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 H5709-1-AE J6E250379-1-SAMP 05/10/2006 10:20	0.833sa,g	12.57g,in	AmtRec: FILTER #Containers: 1	1.5	1.6	100	NA	1028	6/21/kea	Scr: Alpha: Beta:
2 H571F-1-AE J6E250379-2-SAMP 05/10/2006 10:35	0.833sa,g	12.59g,in	AmtRec: FILTER #Containers: 1		0.3		NB			Scr: Alpha: Beta:
3 H571G-1-AE J6E250379-3-SAMP 05/10/2006 10:50	0.833sa,g	12.51g,in	AmtRec: FILTER #Containers: 1		0.5		NC			Scr: Alpha: Beta:
4 H571M-1-AE J6E250379-4-SAMP 05/10/2006 11:25	0.833sa,g	12.57g,in	AmtRec: FILTER #Containers: 1		0.6		ND			Scr: Alpha: Beta:
5 H571N-1-AE J6E250379-5-SAMP 05/10/2006 12:05	0.833sa,g	12.55g,in	AmtRec: FILTER #Containers: 1		0.3		NC			Scr: Alpha: Beta:
6 H571Q-1-AE J6E250379-6-SAMP 05/10/2006 12:20	0.833sa,g	12.59g,in	AmtRec: FILTER #Containers: 1		0.6		NA	1020	6/21/kea	Scr: Alpha: Beta:
7 H571R-1-AE J6E250379-7-SAMP 05/10/2006 12:25	0.833sa,g	12.59g,in	AmtRec: FILTER #Containers: 1		0.1		NB			Scr: Alpha: Beta:

380

STL RICHLAND

6/15/2006 2:36:15 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

BA Gross Alpha PrpRC5016/5014
S7 Gross Alpha by GPC using Am-241 curve
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146439 **FILTER** **pCi/sampl** **PM, Quote: SA , 63174**

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: HansenM Scott

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
8 H571T-1-AE J6E250379-8-SAMP 05/10/2006 12:10	0.833sa,g	12.53g,in AmtRec: FILTER	#Containers: 1	1.5	0.3	100	10C Scr:	1220 Alpha:	6/21/Wen Beta:	
9 H571V-1-AE J6E250379-9-SAMP 05/10/2006 10:10	0.833sa,g	12.72g,in AmtRec: FILTER	#Containers: 1		0.4		10D Scr:	Alpha:	Beta:	
10 H571X-1-AE J6E250379-10-SAMP 05/10/2006 10:30	0.833sa,g	12.56g,in AmtRec: FILTER	#Containers: 1		0.4		10E Scr:	Alpha:	Beta:	
11 H5710-1-AE J6E250379-11-SAMP 05/10/2006 10:45	0.833sa,g	12.60g,in AmtRec: FILTER	#Containers: 1		17.2		10A Scr:	1414 Alpha:	6/21/Wen Beta:	
12 H5711-1-AE J6E250379-12-SAMP 05/10/2006 11:20	0.833sa,g	12.69g,in AmtRec: FILTER	#Containers: 1		1.0		10B Scr:	Alpha:	Beta:	
13 H5712-1-AE J6E250379-13-SAMP 05/10/2006 12:00	0.833sa,g	12.59g,in AmtRec: FILTER	#Containers: 1		1.3		10C Scr:	Alpha:	Beta:	
14 H5713-1-AE J6E250379-14-SAMP 05/10/2006 12:15	0.833sa,g	12.60g,in AmtRec: FILTER	#Containers: 1		0.3		10D Scr:	Alpha:	Beta:	

381

STL RICHLAND

6/15/2006 2:36:15 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

BA Gross Alpha PrpRC5016/5014
S7 Gross Alpha by GPC using Am-241 curve
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146439 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15H5714-1-AE J6E250379-15-SAMP 05/10/2006 10:15	0.833sa,g	12.62g,in AmtRec: FILTER	#Containers: 1	1.5	1.5	100	102	1414	6/21/06	
16H6AXH-1-AA-B J6E260000-439-BLK 05/10/2006 10:20		1.00sa,in AmtRec:	#Containers: 1		0.2		NA	1613		
17H6AXH-1-AC-C J6E260000-439-LCS 05/10/2006 10:20		1.00sa,in AmtRec:	ASC0389 06/15/06,pd 02/09/06,r #Containers: 1		0.3		ND			

Scr: Alpha: Beta:

Comments: ~~H5709-SAMP~~ MH 6-15-06 Comments Please note that a yellowish orange substance fell into or around samples H5709, H571F, H5710 & H5711 from inside the hood, possibly caused by recent rainfall MH 6-15-06

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H57091AE-SAMP Constituent List:
ALPHA RDL:20 pCi/sam LCL: UCL: RPD:
H6AXH1AA-BLK:
ALPHA RDL:20 pCi/sam LCL: UCL: RPD:
H6AXH1AC-LCS:

H57091AE-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H6AXH1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H6AXH1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

6/22/2006 8:55:58 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/22/2005, 6/27/2006, Batch: '6146439', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6146439						
AC		**CalcC**	**HansenM**	6/13/2006 1:38:44 PM		
SC			HansenM	InPrep2	6/13/2006 1:38:44 PM	RICH-RC-5016 REVISION 5
SC			hansenm	IsBatched	6/15/2006 11:40:44 AM	ICOC_RADCALC v4.8.24
SC			ScottM	Prep2C	6/21/2006 8:25:27 AM	RICH-RC-5014 REVISION 6
SC			BlackCL	InCnt1	6/21/2006 8:37:03 AM	RICH-RD-0003 REVISION 4
SC			DAWKINSO	CalcC	6/21/2006 9:36:59 PM	RICH-RD-0003 REVISION 4
AC			**ScottM**	6/21/2006 8:25:27		
AC			**BlackCL**	6/21/2006 8:37:03		
AC			**DAWKINSO**	6/21/2006 9:36:59 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Page 1

Grp Rec Cnt: 4

ICOCFractions v4.8.18

6/22/2006 8:55:58 AM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes	
31758	**9H570910**			**J6E2503791**	000450	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM					
ALPHA	BAS7	0		6/21/2006 9:37:56 AM	**1.0298E+01**	2.869E+00	3.064E+00	8.319E+00	PCI/SA		1.0	1.0E+0	2.093E-2
BETA	BDS8	0		6/20/2006 2:03:16 PM	**4.4442E+01**	2.683E+00	4.815E+00	6.021E+00	PCI/SA		1.0	1.0E+0	3.346E-2
31758	**9H571010**			**J6E25037911**	P-0623	FILTER	5/25/2006 10:00:00	5/10/2006 10:45:00 AM					
ALPHA	BAS7	0		6/21/2006 1:23:40 PM	**7.1046E+01**	6.941E+00	1.016E+01	9.566E+00	PCI/SA		1.0	1.0E+0	2.073E-2
BETA	BDS8	0		6/20/2006 4:02:16 PM	**1.549E+02**	4.677E+00	1.173E+01	6.441E+00	PCI/SA		1.0	1.0E+0	3.266E-2
31758	**9H571110**			**J6E25037912**	P-0624	FILTER	5/25/2006 10:00:00	5/10/2006 11:20:00 AM					
ALPHA	BAS7	0		6/21/2006 1:23:40 PM	**5.3238E+00**	2.048E+00	2.122E+00	6.394E+00	PCI/SA		1.0	1.0E+0	2.113E-2
BETA	BDS8	0		6/20/2006 4:02:16 PM	**3.3468E+01**	2.452E+00	3.66E+00	6.231E+00	PCI/SA		1.0	1.0E+0	3.344E-2
31758	**9H571210**			**J6E25037913**	P-0625	FILTER	5/25/2006 10:00:00	5/10/2006 12:00:00 PM					
ALPHA	BAS7	0		6/21/2006 1:23:40 PM	**6.673E+00**	2.279E+00	2.383E+00	6.679E+00	PCI/SA		1.0	1.0E+0	2.095E-2
BETA	BDS8	0		6/20/2006 4:02:16 PM	**3.475E+01**	2.592E+00	3.884E+00	6.718E+00	PCI/SA		1.0	1.0E+0	3.336E-2
31758	**9H571310**			**J6E25037914**	P-0626	FILTER	5/25/2006 10:00:00	5/10/2006 12:15:00 PM					
ALPHA	BAS7	0		6/21/2006 1:23:40 PM	**5.2958E+00**	1.995E+00	2.067E+00	6.113E+00	PCI/SA		1.0	1.0E+0	2.096E-2
BETA	BDS8	0		6/20/2006 4:05:03 PM	**2.5918E+01**	2.289E+00	2.94E+00	6.465E+00	PCI/SA		1.0	1.0E+0	3.415E-2
31758	**9H571410**			**J6E25037915**	P-0627	FILTER	5/25/2006 10:00:00	5/10/2006 10:15:00 AM					
ALPHA	BAS7	0		6/21/2006 1:23:40 PM	**2.5759E+00**	1.532E+00	1.554E+00	5.551E+00	PCI/SA		1.0	1.0E+0	2.096E-2
BETA	BDS8	0		6/20/2006 4:05:03 PM	**2.64E+01**	2.228E+00	3.165E+00	5.976E+00	PCI/SA		1.0	1.0E+0	3.324E-2
31758	**9H571F10**			**J6E2503792**	000451	FILTER	5/25/2006 10:00:00	5/10/2006 10:35:00 AM					
ALPHA	BAS7	0		6/21/2006 9:37:56 AM	**7.5196E+00**	2.329E+00	2.457E+00	6.451E+00	PCI/SA		1.0	1.0E+0	2.087E-2
BETA	BDS8	0		6/20/2006 2:03:16 PM	**3.3469E+01**	2.585E+00	3.53E+00	7.012E+00	PCI/SA		1.0	1.0E+0	3.334E-2
31758	**9H571G10**			**J6E2503793**	000452	FILTER	5/25/2006 10:00:00	5/10/2006 10:50:00 AM					
ALPHA	BAS7	0		6/21/2006 9:37:56 AM	**8.3814E+00**	2.486E+00	2.635E+00	6.711E+00	PCI/SA		1.0	1.0E+0	2.077E-2
BETA	BDS8	0		6/20/2006 4:02:18 PM	**3.6893E+01**	2.583E+00	3.739E+00	6.749E+00	PCI/SA		1.0	1.0E+0	3.321E-2
31758	**9H571M10**			**J6E2503794**	000453	FILTER	5/25/2006 10:00:00	5/10/2006 11:25:00 AM					
ALPHA	BAS7	0		6/21/2006 9:37:56 AM	**1.0018E+01**	2.543E+00	2.744E+00	6.144E+00	PCI/SA		1.0	1.0E+0	2.088E-2
BETA	BDS8	0		6/20/2006 4:02:18 PM	**4.4018E+01**	2.765E+00	4.159E+00	6.617E+00	PCI/SA		1.0	1.0E+0	3.324E-2
31758	**9H571N10**			**J6E2503795**	000454	FILTER	5/25/2006 10:00:00	5/10/2006 12:05:00 PM					
ALPHA	BAS7	0		6/21/2006 9:37:56 AM	**7.6052E+00**	2.27E+00	2.401E+00	5.544E+00	PCI/SA		1.0	1.0E+0	2.088E-2
BETA	BDS8	0		6/20/2006 4:02:18 PM	**3.0106E+01**	2.462E+00	3.228E+00	6.611E+00	PCI/SA		1.0	1.0E+0	3.355E-2
31758	**9H571Q10**			**J6E2503796**	000455	FILTER	5/25/2006 10:00:00	5/10/2006 12:20:00 PM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**5.888E+00**	2.404E+00	2.481E+00	8.28E+00	PCI/SA		1.0	1.0E+0	2.091E-2
BETA	BDS8	0		6/20/2006 4:02:18 PM	**3.9594E+01**	2.647E+00	3.775E+00	6.341E+00	PCI/SA		1.0	1.0E+0	3.357E-2
31758	**9H571R10**			**J6E2503797**	000456	FILTER	5/25/2006 10:00:00	5/10/2006 12:25:00 PM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**-5.3806E-01**	1.049E+00	1.05E+00	6.462E+00	PCI/SA		1.0	1.0E+0	2.082E-2
BETA	BDS8	0		6/20/2006 4:02:22 PM	**1.8366E+00**	1.466E+00	1.472E+00	6.221E+00	PCI/SA		1.0	1.0E+0	3.334E-2
31758	**9H571T10**			**J6E2503798**	000457	FILTER	5/25/2006 10:00:00	5/10/2006 12:10:00 PM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**0.0E+00**	0.0E+00	1.22E+00	6.687E+00	PCI/SA		1.0	1.0E+0	2.083E-2
BETA	BDS8	0		6/20/2006 4:02:22 PM	**1.6761E+00**	1.28E+00	1.292E+00	5.419E+00	PCI/SA		1.0	1.0E+0	3.393E-2
31758	**9H571V10**			**J6E2503799**	P-0621	FILTER	5/25/2006 10:00:00	5/10/2006 10:10:00 AM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**4.2238E+00**	1.84E+00	1.89E+00	6.065E+00	PCI/SA		1.0	1.0E+0	2.113E-2
BETA	BDS8	0		6/20/2006 4:02:22 PM	**2.8114E+01**	2.298E+00	2.998E+00	6.19E+00	PCI/SA		1.0	1.0E+0	3.331E-2
31758	**9H571X10**			**J6E25037910**	P-0622	FILTER	5/25/2006 10:00:00	5/10/2006 10:30:00 AM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**6.6226E+00**	2.172E+00	2.277E+00	5.66E+00	PCI/SA		1.0	1.0E+0	2.046E-2
BETA	BDS8	0		6/20/2006 4:02:22 PM	**2.6877E+01**	2.285E+00	2.952E+00	6.192E+00	PCI/SA		1.0	1.0E+0	3.167E-2
31758	**H6AXH1AB**			**J6E260000439**	INTRA-LAB BLANK	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM					
ALPHA	BAS7	0	B	6/21/2006 3:22:57 PM	**-2.2751E-03**	3.305E-02	3.305E-02	1.728E-01	PCI/SA		1.0	1.0E+0	1.0E+0
31758	**H6AXH1CS**			**J6E260000439**	INTRA-LAB CHECK	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM					
ALPHA	BAS7	0	S	6/21/2006 3:22:57 PM	**2.0741E+00**	1.545E-01	2.613E-01	1.346E-01	PCI/SA	2.3832E+00	1.0	1.0E+0	1.0E+0

6146439, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

Batch Nbr: 6146439

Alpha Beta, Alpha by GPC-Am , Results Summary Report

6/21/2006 9:34:50 PM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Alpha by GPC-Am				Richland Standard Gross Alpha/Beta Wo Blk Subt										
Calc	S7	FILTER	H57091AE	ALPHA	1.03E+01	(3.06E+00)		PCI/SA	R	3.42E+00	8.32E+00	CRDL met	100%	
Calc	S7	FILTER	H571F1AE	ALPHA	7.52E+00	(2.46E+00)		PCI/SA	R	2.50E+00	6.45E+00		100%	
Calc	S7	FILTER	H571G1AE	ALPHA	8.38E+00	(2.63E+00)		PCI/SA	R	2.60E+00	6.71E+00		100%	
Calc	S7	FILTER	H571M1AE	ALPHA	1.00E+01	(2.74E+00)		PCI/SA	R	2.37E+00	6.14E+00		100%	
Calc	S7	FILTER	H571N1AE	ALPHA	7.61E+00	(2.40E+00)		PCI/SA	R	2.02E+00	5.54E+00		100%	
Calc	S7	FILTER	H571Q1AE	ALPHA	5.89E+00	(2.48E+00)		PCI/SA	R	3.40E+00	8.28E+00		100%	
Calc	S7	FILTER	H571R1AE	ALPHA	-5.38E-01	(1.05E+00)	U4	PCI/SA	R	2.50E+00	6.46E+00		100%	
Calc	S7	FILTER	H571T1AE	ALPHA	0.00E+00	(1.22E+00)	U4	PCI/SA	R	2.59E+00	6.69E+00		100%	
Calc	S7	FILTER	H571V1AE	ALPHA	4.22E+00	(1.89E+00)		PCI/SA	R	2.34E+00	6.07E+00		100%	
Calc	S7	FILTER	H571X1AE	ALPHA	6.62E+00	(2.28E+00)		PCI/SA	R	2.06E+00	5.66E+00		100%	
Calc	S7	FILTER	H57101AE	ALPHA	7.10E+01	(1.02E+01)		PCI/SA	R	3.93E+00	9.57E+00		100%	
Calc	S7	FILTER	H57111AE	ALPHA	5.32E+00	(2.12E+00)		PCI/SA	R	2.48E+00	6.39E+00		100%	
Calc	S7	FILTER	H57121AE	ALPHA	6.67E+00	(2.38E+00)		PCI/SA	R	2.59E+00	6.68E+00		100%	
Calc	S7	FILTER	H57131AE	ALPHA	5.30E+00	(2.07E+00)		PCI/SA	R	2.35E+00	6.11E+00		100%	
Calc	S7	FILTER	H57141AE	ALPHA	2.58E+00	(1.55E+00)		PCI/SA	R	2.02E+00	5.55E+00		100%	
Calc	S7	FILTER	H6AXH1AA	ALPHA	-2.28E-03	(3.30E-02)	U4	PCI/SA	R	7.10E-02	1.73E-01	B	100%	
Calc	S7	FILTER	H6AXH1AC	ALPHA	2.07E+00	(2.61E-01)		PCI/SA	R	5.22E-02	1.35E-01	S	100%	87%

P Anderson
6·22·06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17
RADCALC v4.8.24
STL Richland

Batch Nbr: 6146439

Alpha Beta, Alpha by GPC-Am , Calculated Results

Detailed Report

6/21/2006 9:34:51 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	S7	FILTER	*STLE	GabWoBS	**H57091AE**	**PCI/SA**		05/10/06 10:20	06/21/06 09:37			1	1.00 Sa	
536403,000450					,J6E250379-1 v4.8.24		FILTER			01.6				0.020929 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 10:27	ALPHA	26	36	GPC10A	1.5	N	N	3.9292E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.357E-02)	(0.000E+00)		8%			(0.000E+00)	47.781404		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**10.298069**		1.88000E-01	0.478465	0.478465	1.00 Sa	100%		8.31912		
				(3.064086)		(5.2383E-02)	(0.139684)	(0.139684)	(0.028284)			3.419362		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	S7	FILTER	*STLE	GabWoBS	**H571F1AE**	**PCI/SA**		05/10/06 10:35	06/21/06 09:37			1	1.00 Sa	
536403,000451					,J6E250379-2 v4.8.24		FILTER			00.3				0.020873 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 10:27	ALPHA	18	20	GPC10B	1.5	N	N	4.0178E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.349E-02)	(0.000E+00)		8%			(0.000E+00)	47.907646		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**7.519617**		1.40000E-01	0.348453	0.348453	1.00 Sa	100%		6.450757		
				(2.456802)		(4.3359E-02)	(0.112073)	(0.112073)	(0.028284)			2.499071		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	S7	FILTER	*STLE	GabWoBS	**H571G1AE**	**PCI/SA**		05/10/06 10:50	06/21/06 09:37			1	1.00 Sa	
536403,000452					,J6E250379-3 v4.8.24		FILTER			00.5				0.020773 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 10:27	ALPHA	19	20	GPC10C	1.5	N	N	3.8808E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.292E-02)	(0.000E+00)		8%			(0.000E+00)	48.13916		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**8.381414**		1.50000E-01	0.38652	0.38652	1.00 Sa	100%		6.710719		
				(2.634604)		(4.4497E-02)	(0.119452)	(0.119452)	(0.028284)			2.599782		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	S7	FILTER	*STLE	GabWoBS	**H571M1AE**	**PCI/SA**		05/10/06 11:25	06/21/06 09:37			1	1.00 Sa	
536403,000453					,J6E250379-4 v4.8.24		FILTER			00.6				0.020884 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 10:27	ALPHA	23	19	GPC10D	1.5	N	N	4.1339E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.203E-02)	(0.000E+00)		8%			(0.000E+00)	47.884548		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4 RADCALC v4.8.24
STL Richland

Batch Nbr: 6146439

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/21/2006 9:34:51 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**10.01806**		1.92000E-01	0.464453	0.464453	1.00 Sa	100%		6.143637		
				(2.743547)		(4.8744E-02)	(0.124365)	(0.124365)	(0.028284)			2.36622		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	S7	FILTER	*STLE	GabWoBS	**H571N1AE**	**PCI/SA**		05/10/06 12:05	06/21/06 09:37			1	1.00 Sa	
536403,000454					,J6E250379-5 v4.8.24		FILTER			00.3				0.020878 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 10:27	ALPHA	16	12	GPC10E	1.5	N	N	3.8582E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.142E-02)	(0.000E+00)		8%			(0.000E+00)	47.896768		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**7.60522**		1.36000E-01	0.3525	0.3525	1.00 Sa	100%		5.543841		
				(2.401081)		(4.0596E-02)	(0.109432)	(0.109432)	(0.028284)			2.015391		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	S7	FILTER	*STLE	GabWoBS	**H571Q1AE**	**PCI/SA**		05/10/06 12:20	06/21/06 11:30			1	1.00 Sa	
536403,000455					,J6E250379-6 v4.8.24		FILTER			00.6				0.02091 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 12:20	ALPHA	18	36	GPC10A	1.5	N	N	3.9513E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.365E-02)	(0.000E+00)		8%			(0.000E+00)	47.823736		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**5.88803**		1.08000E-01	0.273325	0.273325	1.00 Sa	100%		8.279911		
				(2.481088)		(4.4091E-02)	(0.114098)	(0.114098)	(0.028284)			3.403247		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	S7	FILTER	*STLE	GabWoBS	**H571R1AE**	**PCI/SA**		05/10/06 12:25	06/21/06 11:30			1	1.00 Sa	
536403,000456					,J6E250379-7 v4.8.24		FILTER			00.1				0.020819 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 12:20	ALPHA	3	20	GPC10B	1.5	N	N	4.0213E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.350E-02)	(0.000E+00)		8%			(0.000E+00)	48.03351		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**-0.538056**	**U4**	-1.00000E-02	-0.024868	-0.024868	1.00 Sa	100%		6.462059		
				(1.050358)		(1.9494E-02)	(0.048524)	(0.048524)	(0.028284)			2.503449		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	S7	FILTER	*STLE	GabWoBS	**H571T1AE**	**PCI/SA**		05/10/06 12:10	06/21/06 11:30			1	1.00 Sa	
536403,000457					,J6E250379-8 v4.8.24		FILTER			00.3				0.020828 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:8

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146439

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/21/2006 9:34:51 PM

0	06/21/06 12:20	ALPHA	4	20	GPC10C	1.5	N	N	3.8841E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.293E-02)	(0.000E+00)		8%			(0.000E+00)	48.012501		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	100%		6.687312		
				(1.219914)		(2.1909E-02)	(0.056406)	(0.056406)	(0.028284)			2.590714		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	S7	FILTER	*STLE	GabWoBS	**H571V1AE**	**PCI/SA**		05/10/06 10:10	06/21/06 11:30			1	1.00 Sa	
536403,P-0621					,J6E250379-9 v4.8.24		FILTER			00.4				0.021135 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 12:20	ALPHA	12	19	GPC10D	1.5	N	N	4.1377E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.204E-02)	(0.000E+00)		8%			(0.000E+00)	47.315152		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**4.223829**		8.20000E-02	0.19818	0.19818	1.00 Sa	100%		6.065068		
				(1.890437)		(3.5721E-02)	(0.087965)	(0.087965)	(0.028284)			2.335959		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	S7	FILTER	*STLE	GabWoBS	**H571X1AE**	**PCI/SA**		05/10/06 10:30	06/21/06 11:30			1	1.00 Sa	
536403,P-0622					,J6E250379-10 v4.8.24		FILTER			00.4				0.020459 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 12:20	ALPHA	14	12	GPC10E	1.5	N	N	3.8565E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.141E-02)	(0.000E+00)		8%			(0.000E+00)	48.878469		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**6.622585**		1.16000E-01	0.30079	0.30079	1.00 Sa	100%		5.659884		
				(2.276721)		(3.8053E-02)	(0.101952)	(0.101952)	(0.028284)			2.057577		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	S7	FILTER	*STLE	GabWoBS	**H57101AE**	**PCI/SA**		05/10/06 10:45	06/21/06 13:23			1	1.00 Sa	
536403,P-0623					,J6E250379-11 v4.8.24		FILTER			17.2				0.020734 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 14:13	ALPHA	120	36	GPC10A	1.5	N	N	3.4493E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.191E-02)	(0.000E+00)		8%			(0.000E+00)	48.229768		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**71.046038**		1.12800E+00	3.270229	3.270229	1.00 Sa	100%		9.565555		
				(10.156677)		(1.1020E-01)	(0.428104)	(0.428104)	(0.028284)			3.931678		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:12

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146439

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/21/2006 9:34:51 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	S7	FILTER	*STLE	GabWoBS	**H57111AE**	**PCI/SA**		05/10/06 11:20	06/21/06 13:23			1	1.00 Sa	
536403,P-0624					,J6E250379-12 v4.8.24		FILTER			01.0				0.021126 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 14:13	ALPHA	14	20	GPC10B	1.5	N	N	4.0050E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.344E-02)	(0.000E+00)		8%			(0.000E+00)	47.3343		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**5.323799**		1.00000E-01	0.249689	0.249689	1.00 Sa	100%		6.393883		
				(2.121699)		(3.8471E-02)	(0.09847)	(0.09847)	(0.028284)			2.477038		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	S7	FILTER	*STLE	GabWoBS	**H57121AE**	**PCI/SA**		05/10/06 12:00	06/21/06 13:23			1	1.00 Sa	
536403,P-0625					,J6E250379-13 v4.8.24		FILTER			01.3				0.020949 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 14:13	ALPHA	16	20	GPC10C	1.5	N	N	3.8668E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.288E-02)	(0.000E+00)		8%			(0.000E+00)	47.736013		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**6.673038**		1.20000E-01	0.310335	0.310335	1.00 Sa	100%		6.678599		
				(2.382523)		(4.0988E-02)	(0.109358)	(0.109358)	(0.028284)			2.587338		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	S7	FILTER	*STLE	GabWoBS	**H57131AE**	**PCI/SA**		05/10/06 12:15	06/21/06 13:23			1	1.00 Sa	
536403,P-0626					,J6E250379-14 v4.8.24		FILTER			00.3				0.020959 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 14:13	ALPHA	14	19	GPC10D	1.5	N	N	4.1395E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.204E-02)	(0.000E+00)		8%			(0.000E+00)	47.712418		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**5.295767**		1.02000E-01	0.246406	0.246406	1.00 Sa	100%		6.113246		
				(2.067485)		(3.8419E-02)	(0.095151)	(0.095151)	(0.028284)			2.354515		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	S7	FILTER	*STLE	GabWoBS	**H57141AE**	**PCI/SA**		05/10/06 10:15	06/21/06 13:23			1	1.00 Sa	
536403,P-0627					,J6E250379-15 v4.8.24		FILTER			01.5				0.020962 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 14:13	ALPHA	7	12	GPC10E	1.5	N	N	3.8374E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.135E-02)	(0.000E+00)		8%			(0.000E+00)	47.704343		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146439

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/21/2006 9:34:52 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**2.575907**		4.60000E-02	0.119874	0.119874	1.00 Sa	100%		5.551498		
				(1.554262)		(2.7350E-02)	(0.072002)	(0.072002)	(0.028284)			2.018175		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	S7	FILTER	*STLE	GabWoBS	**H6AXH1AA**	**PCI/SA**	**B**	05/10/06 10:20	06/21/06 15:22			1	1.00 Sa	
0,INTRA-LAB BLANK					,J6E260000-439		FILTER			00.2				1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 16:12	ALPHA	7	36	GPC10A	1.5	N	N	3.9598E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.368E-02)	(0.000E+00)		8%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**-0.002275**	**U4**	-2.00000E-03	-0.005051	-0.005051	1.00 Sa	100%		0.172763		
				(0.033049)		(2.9052E-02)	(0.073367)	(0.073367)	(0.017321)			0.07101		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
17	Calc	S7	FILTER	*STLE	GabWoBS	**H6AXH1AC**	**PCI/SA**	**S**	05/10/06 10:20	06/21/06 15:22		ASC0389	1	1.00 Sa	
0,INTRA-LAB CHECK					,J6E260000-439		FILTER			00.3		ASC0389 Alq		1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/21/06 16:12	ALPHA	189	20	GPC10B	1.5	N	N	4.0178E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.349E-02)	(0.000E+00)		8%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	ALPHA	R	**2.074123**		1.85000E+00	4.604558	4.604558	1.00 Sa	100%	87%	0.13465		
				(0.261312)		(1.3777E-01)	(0.526464)	(0.526464)	(0.017321)			0.052164		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17

RADCALC v4.8.24

STL Richland

UST Number: H57091AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H57091AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4229

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00026	00000	0100	00000	1000	21-JUN-2006 10:27:56.85

Bkg File: [quad10.bkgrnd]2006-06-21_0434.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00036	0500	0.07	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H571F1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H571F1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4226

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00018	00000	0100	00000	1000	21-JUN-2006 10:27:56.85

Bkg File: [quad10.bkgrnd]2006-06-21_0434.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H571G1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H571G1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4235

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00019	00000	0100	00000	1000	21-JUN-2006 10:27:56.85

Bkg File: [quad10.bkgrnd]2006-06-21_0434.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H571M1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H571M1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4229

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00023	00000	0100	00000	1000	21-JUN-2006 10:27:56.85

Bkg File: [quad10.bkgrnd]2006-06-21_0434.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00019	0500	0.04	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H571N1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H571N1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4224

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00016	00000	0100	00000	1000	21-JUN-2006 10:27:56.85

Bkg File: [quad10.bkgrnd]2006-06-21_0434.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00012	0500	0.02	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H571Q1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H571Q1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4229

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00018	00000	0100	00000	1000	21-JUN-2006 12:20:00.62

Bkg File: [quad10.bkgrnd]2006-06-21_0434.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00036	0500	0.07	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H571R1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H571R1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4226

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00003	00000	0100	00000	1000	21-JUN-2006 12:20:00.62

Bkg File: [quad10.bkgrnd]2006-06-21_0434.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H571T1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H571T1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4235

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00004	00000	0100	00000	1000	21-JUN-2006 12:20:00.62

Bkg File: [quad10.bkgrnd]2006-06-21_0434.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H571V1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H571V1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4229

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00012	00000	0100	00000	1000	21-JUN-2006 12:20:00.62

Bkg File: [quad10.bkgrnd]2006-06-21_0434.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00019	0500	0.04	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H571X1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H571X1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4224

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00014	00000	0100	00000	1000	21-JUN-2006 12:20:00.62

Bkg File: [quad10.bkgrnd]2006-06-21_0434.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00012	0500	0.02	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H57101AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H57101AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4229

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00120	00000	0100	00000	1000	21-JUN-2006 14:13:40.74

Bkg File: [quad10.bkgrnd]2006-06-21_0434.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00036	0500	0.07	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H57111AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H57111AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4226

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00014	00000	0100	00000	1000	21-JUN-2006 14:13:40.74

Bkg File: [quad10.bkgrnd]2006-06-21_0434.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H57121AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H57121AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4235

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00016	00000	0100	00000	1000	21-JUN-2006 14:13:40.74

Bkg File: [quad10.bkgrnd]2006-06-21_0434.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H57131AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H57131AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4229

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00014	00000	0100	00000	1000	21-JUN-2006 14:13:40.74

Bkg File: [quad10.bkgrnd]2006-06-21_0434.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00019	0500	0.04	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H57141AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H57141AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4224

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00007	00000	0100	00000	1000	21-JUN-2006 14:13:40.74

Bkg File: [quad10.bkgrnd]2006-06-21_0434.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00012	0500	0.02	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H6AXH1AA Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H6AXH1AA.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4229

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00007	00000	0100	00000	1000	21-JUN-2006 16:12:57.16

Bkg File: [quad10.bkgrnd]2006-06-21_0434.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00036	0500	0.07	00000	1000	21-JUN-2006 04:34:44.72

UST Number: H6AXH1AC Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H6AXH1AC.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4226

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00189	00000	0100	00000	1000	21-JUN-2006 16:12:57.16

Bkg File: [quad10.bkgrnd]2006-06-21_0434.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	21-JUN-2006 04:34:44.72

BETA

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/21/2006 4:13:55 PM

Lot No., Due Date: J6E250379; 06/22/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6146441; RBETA-SR Beta by GPC-Sr/Y

SDG, Matrix: 31758; FILTER

	Yes	No	N/A
1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?			✓
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?			✓
3.5 Are the sample yields and MDAs within contract limits?		✓	
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?			✓
4.4 Were spectra reviewed/meet contractual requirements?			✓
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?	✓		
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?	✓		
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

See NCM. 10-08215

First Level Review Pam Anderson **Date** 6-21-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6146441

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?		/	
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	/		
3. Are the correct isotopes reported?	/		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	/		
2. Does the blank result meet the Contract criteria?	/		
3. Is the blank result < the Contract Detection Limit?	/		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			/
5. Is the LCS recovery with contract acceptance criteria?	/		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	/		
8. Do the MS/MSD results and yields meet acceptance criteria?			/
9. Do the duplicate sample results and yields meet acceptance criteria?			/
C. Other 1. Are all Nonconformances included and noted?	/		
2. Are all required forms filled out?	/		
3. Was the correct methodology used?	/		
4. Was transcription checked?	/		
5. Were all calculations checked at a minimum frequency?	/		
6. Were units checked?	/		

Comments on any "No" response: See NCM

Second Level Review: Sheryl A. Adam Date: 6-22-06

6/20/2006 12:52:42 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

BD Gross Beta PrpRC5016/5014
S8 Gross Beta by GPC using Sr/Y-90 curve
01 STANDARD TEST SET

Pipet #:

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146441 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 6146431 7YSR, 6146436 9NS1, 6146439 BAS7, 6146441 BDS8, 6146445 BXTE, 6146452 BXTF,

Prep Tech: HansenM Scott

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 H5709-1-AF J6E250379-1-SAMP 05/10/2006 10:20	0.833sa,g	500.31sa,g	50.13g,in	0.0835g	Disk PPT 1.5 0.7	100	32C	1450	6/20/06	
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
2 H571F-1-AF J6E250379-2-SAMP 05/10/2006 10:35	0.833sa,g	502.43sa,g	50.27g,in	0.0833g	2.0		32D			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
3 H571G-1-AF J6E250379-3-SAMP 05/10/2006 10:50	0.833sa,g	501.65sa,g	50.11g,in	0.0832g	1.7		26A	1451	6/20/06	
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
4 H571M-1-AF J6E250379-4-SAMP 05/10/2006 11:25	0.833sa,g	501.39sa,g	50.10g,in	0.0832g	2.4		26B			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
5 H571N-1-AF J6E250379-5-SAMP 05/10/2006 12:05	0.833sa,g	500.72sa,g	50.22g,in	0.0835g	1.7		26C			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
6 H571Q-1-AF J6E250379-6-SAMP 05/10/2006 12:20	0.833sa,g	501.55sa,g	50.32g,in	0.0836g	2.5		26D			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
7 H571R-1-AF J6E250379-7-SAMP 05/10/2006 12:25	0.833sa,g	503.75sa,g	50.40g,in	0.0833g	0.8		27A			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:

STL RICHLAND

411

6/20/2006 12:52:43 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

BD Gross Beta PrpRC5016/5014
S8 Gross Beta by GPC using Sr/Y-90 curve
01 STANDARD TEST SET

Pipet #:

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146441 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
8 H571T-1-AF J6E250379-8-SAMP 05/10/2006 12:10	0.833sa,g	501.13sa,g	50.49g,in	0.0839g	Disw 1.5	987 0.9 100	27B	1651	6/20/06 DW	
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
9 H571V-1-AF J6E250379-9-SAMP 05/10/2006 10:10	0.833sa,g	501.34sa,g	50.14g,in	0.0833g	1.0		27C			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
10 H571X-1-AF J6E250379-10-SAMP 05/10/2006 10:30	0.833sa,g	511.39sa,g	50.14g,in	0.0817g	1.2		27D			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
11 H5710-1-AF J6E250379-11-SAMP 05/10/2006 10:45	0.833sa,g	506.21sa,g	50.23g,in	0.0827g	29.2		28B			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
12 H5711-1-AF J6E250379-12-SAMP 05/10/2006 11:20	0.833sa,g	500.36sa,g	50.12g,in	0.0834g	7.7		28C			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
13 H5712-1-AF J6E250379-13-SAMP 05/10/2006 12:00	0.833sa,g	500.63sa,g	50.10g,in	0.0834g	6.7		28D			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
14 H5713-1-AF J6E250379-14-SAMP 05/10/2006 12:15	0.833sa,g	500.78sa,g	50.59g,in	0.0842g	1.5		31A	1654		
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:

6/15/2006 2:35:55 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

BD Gross Beta PrpRC5016/5014
S8 Gross Beta by GPC using Sr/Y-90 curve
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146441 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15H5714-1-AF J6E250379-15-SAMP 05/10/2006 10:15	0.833sa,g	501.49sa,g	50.11g,in	0.0832g	Disk 1.5	PPT 1.5 100	31B	1654	6/20/06 OD	
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
16H6A00-1-AA-B J6E260000-441-BLK 05/10/2006 10:20			1.00sa,in	1.00sa		0.1	31C			
		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:
17H6A00-1-AC-C J6E260000-441-LCS 05/10/2006 10:20			1.00sa,in	1.00sa	BESB2830 06/15/06,pd 12/28/05,r	0.3	31D			
		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:

Comments: ~~H5709-SAMP~~ MH 6-15-06 Comments please note that a yellowish orange substance fell into or around samples H5709, H571F, H5710, H5711 from inside the hood possible caused by recent rainfall MH 6-15-06

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H57091AF-SAMP Constituent List:

BETA	RDL:5	pCi/sam	LCL:	UCL:	RPD:						
H6A001AA-BLK:											
BETA	RDL:5	pCi/sam	LCL:	UCL:	RPD:						
H6A001AC-LCS:											
Cs-137	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20	Cs-137DA	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20
Sr-90	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20						

H57091AF-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H6A001AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H6A001AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Clouseau
Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: **10-08215**
NCM Initiated By: Pam Anderson
Date Opened: 06/21/2006
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Prep
Tests: Beta by GPC-Sr/Y
Lot #'s (Sample #'s): J6E250379 (1,10,11,12,13,14,15,2,3,4,5, 6,7,8,9),
QC Batches: 6146441

Nonconformance: Other (describe in detail)
Subcategory: Other (explanation required)

Problem Description / Root Cause

Name	Date	Description
Pam Anderson	06/21/2006	1 The CRDL is not met for any sample except QC in the batch. All samples except H571R1AF have results >MDA>CRDL. The CRDL of 6 pCi/sa is 6.22 for this sample. 2 The tech notes on the paperwork that samples listed may have had something drip into the sample from the hood due to a heavy rain: H5709 H571F H5710 H5711.

Corrective Action

Name	Date	Corrective Action
Pam Anderson	06/21/2006	Note in case narrative.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

Date Printed: 6/21/2006

6/21/2006 4:02:14 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/21/2005, 6/26/2006, Batch: '6146441', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6146441						
AC		**CalcC**	**HansenM**	6/13/2006 1:39:04 PM		
SC			hansenm	IsBatched	6/10/2006 9:51:44 AM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/13/2006 1:39:04 PM	RICH-RC-5016 REVISION 5
SC			ScottM	InPrep	6/20/2006 12:52:16 PM	RICH-RC-5014 rEVISION 6
SC			ScottM	Prep2C	6/20/2006 1:01:44 PM	RICH-RC-5014 REVISION 6
SC			BlackCL	InCnt1	6/20/2006 1:04:49 PM	RICH-RD-0003 REVISION 4
SC			DAWKINSO	CalcC	6/20/2006 9:19:16 PM	RICH-RD-0003 REVISION 4
AC			**ScottM**	6/20/2006 12:52:16		
AC			**ScottM**	6/20/2006 1:01:44 PM		
AC			**BlackCL**	6/20/2006 1:04:49 PM		
AC			**DAWKINSO**	6/20/2006 9:19:16 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.18

6/2·/2006 4:02:14 PM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
31758	9H570910			J6E2503791	000450	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM				
BETA	BDS8	0		6/20/2006 2:03:16 PM	4.4442E+01	2.683E+00	4.815E+00	6.021E+00	PCI/SA	1.0	1.0E+0	3.346E-2
31758	9H571010			J6E25037911	P-0623	FILTER	5/25/2006 10:00:00	5/10/2006 10:45:00 AM				
BETA	BDS8	0		6/20/2006 4:02:16 PM	1.549E+02	4.677E+00	1.173E+01	6.441E+00	PCI/SA	1.0	1.0E+0	3.266E-2
31758	9H571110			J6E25037912	P-0624	FILTER	5/25/2006 10:00:00	5/10/2006 11:20:00 AM				
BETA	BDS8	0		6/20/2006 4:02:16 PM	3.3468E+01	2.452E+00	3.66E+00	6.231E+00	PCI/SA	1.0	1.0E+0	3.344E-2
31758	9H571210			J6E25037913	P-0625	FILTER	5/25/2006 10:00:00	5/10/2006 12:00:00 PM				
BETA	BDS8	0		6/20/2006 4:02:16 PM	3.475E+01	2.592E+00	3.884E+00	6.718E+00	PCI/SA	1.0	1.0E+0	3.336E-2
31758	9H571310			J6E25037914	P-0626	FILTER	5/25/2006 10:00:00	5/10/2006 12:15:00 PM				
BETA	BDS8	0		6/20/2006 4:05:03 PM	2.5918E+01	2.289E+00	2.94E+00	6.465E+00	PCI/SA	1.0	1.0E+0	3.415E-2
31758	9H571410			J6E25037915	P-0627	FILTER	5/25/2006 10:00:00	5/10/2006 10:15:00 AM				
BETA	BDS8	0		6/20/2006 4:05:03 PM	2.64E+01	2.228E+00	3.165E+00	5.976E+00	PCI/SA	1.0	1.0E+0	3.324E-2
31758	9H571F10			J6E2503792	000451	FILTER	5/25/2006 10:00:00	5/10/2006 10:35:00 AM				
BETA	BDS8	0		6/20/2006 2:03:16 PM	3.3469E+01	2.585E+00	3.53E+00	7.012E+00	PCI/SA	1.0	1.0E+0	3.334E-2
31758	9H571G10			J6E2503793	000452	FILTER	5/25/2006 10:00:00	5/10/2006 10:50:00 AM				
BETA	BDS8	0		6/20/2006 4:02:18 PM	3.6893E+01	2.583E+00	3.739E+00	6.749E+00	PCI/SA	1.0	1.0E+0	3.321E-2
31758	9H571M10			J6E2503794	000453	FILTER	5/25/2006 10:00:00	5/10/2006 11:25:00 AM				
BETA	BDS8	0		6/20/2006 4:02:18 PM	4.4018E+01	2.765E+00	4.159E+00	6.617E+00	PCI/SA	1.0	1.0E+0	3.324E-2
31758	9H571N10			J6E2503795	000454	FILTER	5/25/2006 10:00:00	5/10/2006 12:05:00 PM				
BETA	BDS8	0		6/20/2006 4:02:18 PM	3.0106E+01	2.462E+00	3.228E+00	6.611E+00	PCI/SA	1.0	1.0E+0	3.355E-2
31758	9H571Q10			J6E2503796	000455	FILTER	5/25/2006 10:00:00	5/10/2006 12:20:00 PM				
BETA	BDS8	0		6/20/2006 4:02:18 PM	3.9594E+01	2.647E+00	3.775E+00	6.341E+00	PCI/SA	1.0	1.0E+0	3.357E-2
31758	9H571R10			J6E2503797	000456	FILTER	5/25/2006 10:00:00	5/10/2006 12:25:00 PM				
BETA	BDS8	0		6/20/2006 4:02:22 PM	1.8366E+00	1.466E+00	1.472E+00	6.221E+00	PCI/SA	1.0	1.0E+0	3.334E-2
31758	9H571T10			J6E2503798	000457	FILTER	5/25/2006 10:00:00	5/10/2006 12:10:00 PM				
BETA	BDS8	0		6/20/2006 4:02:22 PM	1.6761E+00	1.28E+00	1.292E+00	5.419E+00	PCI/SA	1.0	1.0E+0	3.393E-2
31758	9H571V10			J6E2503799	P-0621	FILTER	5/25/2006 10:00:00	5/10/2006 10:10:00 AM				
BETA	BDS8	0		6/20/2006 4:02:22 PM	2.8114E+01	2.298E+00	2.998E+00	6.19E+00	PCI/SA	1.0	1.0E+0	3.331E-2
31758	9H571X10			J6E25037910	P-0622	FILTER	5/25/2006 10:00:00	5/10/2006 10:30:00 AM				
BETA	BDS8	0		6/20/2006 4:02:22 PM	2.6877E+01	2.285E+00	2.952E+00	6.192E+00	PCI/SA	1.0	1.0E+0	3.167E-2
31758	H6A001AB			J6E260000441	INTRA-LAB BLANK	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM				
BETA	BDS8	0	B	6/20/2006 4:05:03 PM	-5.8824E-02	1.222E-01	1.223E-01	5.564E-01	PCI/SA	1.0	1.0E+0	1.0E+0
31758	H6A001CS			J6E260000441	INTRA-LAB CHECK	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM				
BETA	BDS8	0	S	6/20/2006 4:05:03 PM	4.212E+00	2.38E-01	3.681E-01	5.161E-01	PCI/SA	4.6002E+00 1.0	1.0E+0	1.0E+0

6146441, **Samples Inserted | Updated | NotUpdated => 17 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

STL Richland, Wa Calc Review v4.8.18

Batch Nbr: 6146441

Alpha Beta, Beta by GPC-Sr/Y , Results
Summary Report

6/20/2006 8:43:26 PM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Beta by GPC-Sr/Y				Richland Standard Gross Alpha/Beta Wo Blk Subt										
Calc	S8	FILTER	**H57091AF**	BETA	**4.44E+01**	**(4.81E+00)**		PCI/SA	R	2.85E+00	6.02E+00		100%	
Calc	S8	FILTER	**H571F1AF**	BETA	**3.35E+01**	**(3.53E+00)**		PCI/SA	R	3.34E+00	7.01E+00		100%	
Calc	S8	FILTER	**H571G1AF**	BETA	**3.69E+01**	**(3.74E+00)**		PCI/SA	R	3.22E+00	6.75E+00		100%	
Calc	S8	FILTER	**H571M1AF**	BETA	**4.40E+01**	**(4.16E+00)**		PCI/SA	R	3.14E+00	6.62E+00		100%	
Calc	S8	FILTER	**H571N1AF**	BETA	**3.01E+01**	**(3.23E+00)**		PCI/SA	R	3.13E+00	6.61E+00		100%	
Calc	S8	FILTER	**H571Q1AF**	BETA	**3.96E+01**	**(3.78E+00)**		PCI/SA	R	3.00E+00	6.34E+00		100%	
Calc	S8	FILTER	**H571R1AF**	BETA	**1.84E+00**	**(1.47E+00)**	**U4**	PCI/SA	R	2.95E+00	6.22E+00	V0	100%	
Calc	S8	FILTER	**H571T1AF**	BETA	**1.68E+00**	**(1.29E+00)**	**U4**	PCI/SA	R	2.57E+00	5.42E+00		100%	
Calc	S8	FILTER	**H571V1AF**	BETA	**2.81E+01**	**(3.00E+00)**		PCI/SA	R	2.93E+00	6.19E+00		100%	
Calc	S8	FILTER	**H571X1AF**	BETA	**2.69E+01**	**(2.95E+00)**		PCI/SA	R	2.93E+00	6.19E+00		100%	
Calc	S8	FILTER	**H57101AF**	BETA	**1.55E+02**	**(1.17E+01)**		PCI/SA	R	3.05E+00	6.44E+00		100%	
Calc	S8	FILTER	**H57111AF**	BETA	**3.35E+01**	**(3.66E+00)**		PCI/SA	R	2.95E+00	6.23E+00		100%	
Calc	S8	FILTER	**H57121AF**	BETA	**3.48E+01**	**(3.88E+00)**		PCI/SA	R	3.19E+00	6.72E+00		100%	
Calc	S8	FILTER	**H57131AF**	BETA	**2.59E+01**	**(2.94E+00)**		PCI/SA	R	3.07E+00	6.46E+00		100%	
Calc	S8	FILTER	**H57141AF**	BETA	**2.64E+01**	**(3.16E+00)**		PCI/SA	R	2.83E+00	5.98E+00		100%	
Calc	S8	FILTER	**H6A001AA**	BETA	**-5.88E-02**	**(1.22E-01)**	**U4**	PCI/SA	R	2.65E-01	5.56E-01	**B**	100%	
Calc	S8	FILTER	**H6A001AC**	BETA	**4.21E+00**	**(3.68E-01)**		PCI/SA	R	2.44E-01	5.16E-01	**S**	100%	92%

P Anderson
6-21-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17
RADCALC v4.8.24
STL Richland

Batch Nbr: 6146441

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

Detailed Report

6/20/2006 8:43:26 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	S8	FILTER	*STLE	GabWoBS	**H57091AF**	**PCI/SA**		05/10/06 10:20	06/20/06 14:03			1	1.00 Sa	
536403,000450					,J6E250379-1 v4.8.24		FILTER			00.7				0.083465 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 14:53	BETA	467	507	GPC32C	1.5	N	N	4.4397E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.769E-02)	(0.000E+00)		5%			(0.000E+00)	11.981094		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**44.442012**		3.65600E+00	8.234754	8.234754	1.00 Sa	100%		6.021354		
				(4.814701)		(2.2074E-01)	(0.824991)	(0.824991)	(0.028284)			2.847655		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	S8	FILTER	*STLE	GabWoBS	**H571F1AF**	**PCI/SA**		05/10/06 10:35	06/20/06 14:03			1	1.00 Sa	
536403,000451					,J6E250379-2 v4.8.24		FILTER			02.0				0.083345 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 14:53	BETA	396	650	GPC32D	1.5	N	N	4.2954E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.330E-02)	(0.000E+00)		5%			(0.000E+00)	11.998354		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**33.469392**		2.66000E+00	6.192693	6.192693	1.00 Sa	100%		7.011983		
				(3.529918)		(2.0543E-01)	(0.601148)	(0.601148)	(0.028284)			3.337481		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	S8	FILTER	*STLE	GabWoBS	**H571G1AF**	**PCI/SA**		05/10/06 10:50	06/20/06 16:02			1	1.00 Sa	
536403,000452					,J6E250379-3 v4.8.24		FILTER			01.7				0.083209 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:52	BETA	446	677	GPC26A	1.5	N	N	4.5576E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.556E-02)	(0.000E+00)		5%			(0.000E+00)	12.017978		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**36.892752**		3.10600E+00	6.814956	6.814956	1.00 Sa	100%		6.748796		
				(3.738502)		(2.1750E-01)	(0.63084)	(0.63084)	(0.028284)			3.215362		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	S8	FILTER	*STLE	GabWoBS	**H571M1AF**	**PCI/SA**		05/10/06 11:25	06/20/06 16:02			1	1.00 Sa	
536403,000453					,J6E250379-4 v4.8.24		FILTER			02.4				0.083235 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:52	BETA	474	594	GPC26B	1.5	N	N	4.3670E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.220E-02)	(0.000E+00)		5%			(0.000E+00)	12.014147		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146441

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/20/2006 8:43:27 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**44.017828**		3.55200E+00	8.133717	8.133717	1.00 Sa	100%		6.616661		
				(4.158539)		(2.2311E-01)	(0.691382)	(0.691382)	(0.028284)			3.142279		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	S8	FILTER	*STLE	GabWoBS	**H571N1AF**	**PCI/SA**		05/10/06 12:05	06/20/06 16:02			1	1.00 Sa	
536403,000454					,J6E250379-5 v4.8.24		FILTER			01.7				0.083546 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:52	BETA	342	544	GPC26C	1.5	N	N	4.1764E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.032E-02)	(0.000E+00)		5%			(0.000E+00)	11.969423		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**30.105731**		2.33200E+00	5.583794	5.583794	1.00 Sa	100%		6.611496		
				(3.228345)		(1.9072E-01)	(0.55274)	(0.55274)	(0.028284)			3.13268		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	S8	FILTER	*STLE	GabWoBS	**H571Q1AF**	**PCI/SA**		05/10/06 12:20	06/20/06 16:02			1	1.00 Sa	
536403,000455					,J6E250379-6 v4.8.24		FILTER			02.5				0.083574 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:52	BETA	417	520	GPC26D	1.5	N	N	4.2608E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(8.752E-03)	(0.000E+00)		5%			(0.000E+00)	11.965438		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**39.59409**		3.13000E+00	7.346072	7.346072	1.00 Sa	100%		6.341491		
				(3.775095)		(2.0924E-01)	(0.631534)	(0.631534)	(0.028284)			3.001122		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	S8	FILTER	*STLE	GabWoBS	**H571R1AF**	**PCI/SA**		05/10/06 12:25	06/20/06 16:02			1	1.00 Sa	
536403,000456					,J6E250379-7 v4.8.24		FILTER			00.8				0.083341 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:52	BETA	122	535	GPC27A	1.5	N	N	4.4143E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(9.729E-03)	(0.000E+00)		5%			(0.000E+00)	11.998847		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**1.836585**	**U4**	1.50000E-01	0.339801	0.339801	1.00 Sa	100%		6.221123		
				(1.471584)		(1.1975E-01)	(0.271909)	(0.271909)	(0.028284)			2.946406		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	S8	FILTER	*STLE	GabWoBS	**H571T1AF**	**PCI/SA**		05/10/06 12:10	06/20/06 16:02			1	1.00 Sa	
536403,000457					,J6E250379-8 v4.8.24		FILTER			00.9				0.083927 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:8

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146441

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/20/2006 8:43:27 PM

1	06/20/06 16:52	BETA	124	541	GPC27B	1.5	N	N	5.0595E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500				Y	(3.975E-02)	(0.000E+00)		5%			(0.000E+00)	11.915164		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**1.676085**	**U4**	1.58000E-01	0.312284	0.312284	1.00 Sa	100%		5.418522		
				(1.291536)		(1.2068E-01)	(0.240291)	(0.240291)	(0.028284)			2.567045		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	S8	FILTER	*STLE	GabWoBS	**H571V1AF**	**PCI/SA**		05/10/06 10:10	06/20/06 16:02			1	1.00 Sa	
536403,P-0621					,J6E250379-9 v4.8.24		FILTER			01.0				0.08331 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:52	BETA	345	553	GPC27C	1.5	N	N	4.5080E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(9.972E-03)	(0.000E+00)		5%			(0.000E+00)	12.003365		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**28.114052**		2.34400E+00	5.199647	5.199647	1.00 Sa	100%		6.190421		
				(2.99795)		(1.9160E-01)	(0.511342)	(0.511342)	(0.028284)			2.934434		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	S8	FILTER	*STLE	GabWoBS	**H571X1AF**	**PCI/SA**		05/10/06 10:30	06/20/06 16:02			1	1.00 Sa	
536403,P-0622					,J6E250379-10 v4.8.24		FILTER			01.2				0.081673 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:52	BETA	322	521	GPC27D	1.5	N	N	4.4694E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.131E-02)	(0.000E+00)		5%			(0.000E+00)	12.243988		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**26.876696**		2.17800E+00	4.873112	4.873112	1.00 Sa	100%		6.191815		
				(2.952449)		(1.8516E-01)	(0.496182)	(0.496182)	(0.028284)			2.930439		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	S8	FILTER	*STLE	GabWoBS	**H57101AF**	**PCI/SA**		05/10/06 10:45	06/20/06 16:02			1	1.00 Sa	
536403,P-0623					,J6E250379-11 v4.8.24		FILTER			29.2				0.082657 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:52	BETA	1316	525	GPC28B	1.5	N	N	4.2604E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.060E-02)	(0.000E+00)		5%			(0.000E+00)	12.09825		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**154.902822**		1.21100E+01	28.424327	28.424327	1.00 Sa	100%		6.441491		
				(11.726863)		(3.6565E-01)	(1.804708)	(1.804708)	(0.028284)			3.049234		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:12

RADCALC v4.8.24
STL Richland

Batch Nbr: 6146441

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/20/2006 8:43:27 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	S8	FILTER	*STLE	GabWoBS	**H57111AF**	**PCI/SA**		05/10/06 11:20	06/20/06 16:02			1	1.00 Sa	
536403,P-0624					,J6E250379-12 v4.8.24		FILTER			07.7				0.08344 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:52	BETA	383	542	GPC28C	1.5	N	N	4.4294E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.167E-02)	(0.000E+00)		5%			(0.000E+00)	11.984682		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**33.467645**		2.74600E+00	6.199434	6.199434	1.00 Sa	100%		6.230835		
				(3.660067)		(2.0117E-01)	(0.627948)	(0.627948)	(0.028284)			2.952026		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	S8	FILTER	*STLE	GabWoBS	**H57121AF**	**PCI/SA**		05/10/06 12:00	06/20/06 16:02			1	1.00 Sa	
536403,P-0625					,J6E250379-13 v4.8.24		FILTER			06.7				0.083362 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:52	BETA	384	568	GPC28D	1.5	N	N	4.2047E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.197E-02)	(0.000E+00)		5%			(0.000E+00)	11.995936		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**34.750182**		2.70400E+00	6.430968	6.430968	1.00 Sa	100%		6.717585		
				(3.884219)		(2.0167E-01)	(0.668133)	(0.668133)	(0.028284)			3.186548		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	S8	FILTER	*STLE	GabWoBS	**H57131AF**	**PCI/SA**		05/10/06 12:15	06/20/06 16:05			1	1.00 Sa	
536403,P-0626					,J6E250379-14 v4.8.24		FILTER			01.5				0.084152 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:55	BETA	331	589	GPC31A	1.5	N	N	4.4033E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.295E-02)	(0.000E+00)		5%			(0.000E+00)	11.883306		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**25.917696**		2.13200E+00	4.841863	4.841863	1.00 Sa	100%		6.464727		
				(2.939725)		(1.8830E-01)	(0.511621)	(0.511621)	(0.028284)			3.069465		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	S8	FILTER	*STLE	GabWoBS	**H57141AF**	**PCI/SA**		05/10/06 10:15	06/20/06 16:05			1	1.00 Sa	
536403,P-0627					,J6E250379-15 v4.8.24		FILTER			01.5				0.083235 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:55	BETA	319	504	GPC31B	1.5	N	N	4.4730E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.470E-02)	(0.000E+00)		5%			(0.000E+00)	12.014145		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146441

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/20/2006 8:43:27 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**26.39974**		2.18200E+00	4.878207	4.878207	1.00 Sa	100%		5.976314		
				(3.164851)		(1.8416E-01)	(0.549133)	(0.549133)	(0.028284)			2.825895		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	S8	FILTER	*STLE	GabWoBS	**H6A001AA**	**PCI/SA**	**B**	05/10/06 10:20	06/20/06 16:05			1	1.00 Sa	
0,INTRA-LAB BLANK					,J6E260000-441		FILTER			00.1				1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:55	BETA	120	629	GPC31C	1.5	N	N	4.4414E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(9.878E-03)	(0.000E+00)		5%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**-0.058824**	**U4**	-5.80000E-02	-0.13059	-0.13059	1.00 Sa	100%		0.556443		
				(0.122254)		(1.2048E-01)	(0.271366)	(0.271366)	(0.017321)			0.264636		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
17	Calc	S8	FILTER	*STLE	GabWoBS	**H6A001AC**	**PCI/SA**	**S**	05/10/06 10:20	06/20/06 16:05		BESB2830	1	1.00 Sa	
0,INTRA-LAB CHECK					,J6E260000-441		FILTER			00.3		BESB2830 Alq		1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:55	BETA	512	518	GPC31D	1.5	N	N	4.3677E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.192E-02)	(0.000E+00)		5%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**4.211952**		4.08400E+00	9.350543	9.350543	1.00 Sa	100%	92%	0.516073		
				(0.368136)		(2.3081E-01)	(0.750333)	(0.750333)	(0.017321)			0.244207		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17

RADCALC v4.8.24

STL Richland

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 14:53:16.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H57091AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 14:53:16.00	467	100.00	507	500.00	32C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
7	13	3088	1492

Bkg Count Date/Time
20-JUN-2006 05:50:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 14:53:16.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H571F1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 14:53:16.00	396	100.00	650	500.00	32D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
4	17	3088	1492

Bkg Count Date/Time
20-JUN-2006 05:50:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:52:18.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H571G1AF	111.15	

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:52:18.00	446	100.00	677	500.00	26A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
10	27	3241	1500

Bkg Count Date/Time
20-JUN-2006 05:53:03.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:52:18.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H571M1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:52:18.00	474	100.00	594	500.00	26B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
9	24	3241	1500

Bkg Count Date/Time
20-JUN-2006 05:53:03.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:52:18.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H571N1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:52:18.00	342	100.00	544	500.00	26C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
5	16	3241	1500

Bkg Count Date/Time
20-JUN-2006 05:53:03.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:52:18.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H571Q1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:52:18.00	417	100.00	520	500.00	26D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
8	18	3241	1500

Bkg Count Date/Time
20-JUN-2006 05:53:03.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:52:22.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H571R1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:52:22.00	122	100.00	535	500.00	27A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
4	27	3253	1500

Bkg Count Date/Time
20-JUN-2006 05:53:07.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:52:22.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H571T1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:52:22.00	124	100.00	541	500.00	27B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
7	39	3253	1500

Bkg Count Date/Time
20-JUN-2006 05:53:07.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:52:22.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H571V1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:52:22.00	345	100.00	553	500.00	27C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
8	16	3253	1500

Bkg Count Date/Time
20-JUN-2006 05:53:07.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:52:22.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H571X1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:52:22.00	322	100.00	521	500.00	27D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
4	13	3253	1500

Bkg Count Date/Time
20-JUN-2006 05:53:07.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:52:16.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H57101AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:52:16.00	1316	100.00	525	500.00	28B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
15	24	3128	1500

Bkg Count Date/Time
20-JUN-2006 05:53:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:52:16.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H57111AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:52:16.00	383	100.00	542	500.00	28C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
3	21	3128	1500

Bkg Count Date/Time
20-JUN-2006 05:53:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:52:16.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H57121AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:52:16.00	384	100.00	568	500.00	28D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
4	16	3128	1500

Bkg Count Date/Time
20-JUN-2006 05:53:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:55:03.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H57131AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:55:03.00	331	100.00	589	500.00	31A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
3	13	3288	1492

Bkg Count Date/Time
20-JUN-2006 05:49:29.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:55:03.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H57141AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:55:03.00	319	100.00	504	500.00	31B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
3	15	3288	1492

Bkg Count Date/Time
20-JUN-2006 05:49:29.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:55:03.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H6A001AA	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:55:03.00	120	100.00	629	500.00	31C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
3	21	3288	1492

Bkg Count Date/Time
20-JUN-2006 05:49:29.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:55:03.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H6A001AC	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:55:03.00	512	100.00	518	500.00	31D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
3	19	3288	1492

Bkg Count Date/Time
20-JUN-2006 05:49:29.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

RADIUM 228

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/27/2006 2:45:21 PM

Lot No., Due Date: J6E250379; 06/22/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6146452; RRA228 Ra-228 by GPC

SDG, Matrix: 31758; FILTER

	Yes	No	N/A
1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?	✓		
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?			✓
3.5 Are the sample yields and MDAs within contract limits?		✓	
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?	✓		
4.4 Were spectra reviewed/meet contractual requirements?	✓		
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?	✓		
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?	✓		
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:
See NCM. 10-08242

First Level Review Pam Anderson **Date** 6-27-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6146452

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?		/	
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	/		
3. Are the correct isotopes reported?	/		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	/		
2. Does the blank result meet the Contract criteria?	/		
3. Is the blank result < the Contract Detection Limit?	/		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			/
5. Is the LCS recovery with contract acceptance criteria?	/		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	/		
8. Do the MS/MSD results and yields meet acceptance criteria?			/
9. Do the duplicate sample results and yields meet acceptance criteria?			/
C. Other			
1. Are all Nonconformances included and noted?	/		
2. Are all required forms filled out?	/		
3. Was the correct methodology used?	/		
4. Was transcription checked?	/		
5. Were all calculations checked at a minimum frequency?	/		
6. Were units checked?	/		

Comments on any "No" response: See NCM

Second Level Review: Cheryl A. Adam Date: 6-27-06

STL RICHLAND

6/16/2006 7:55:50 AM

Sample Preparation/Analysis

Balance Id:1120373922,1120373922,2061

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech: 6-19-6 M 10:45

Batch: 6146452 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech: 6-26-6 M 10:45

SEQ Batch, Test: 6146445, BXTE

Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 H5709-1-AD J6E250379-1-SAMP	0.833sa,g	500.31sa,g	150.37g,in	0.2504g	RATA22593 06/13/06		1in	31.8	3x50	7A 1501 6/26/06 7A 0646 6/27/06
					0.9036					
05/10/2006 10:20		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
2 H571F-1-AD J6E250379-2-SAMP	0.833sa,g	502.43sa,g	150.21g,in	0.249g	RATA22594 06/13/06			31.0		7B 1501 6/26/06 7B 0646 6/27/06
					0.8415					
05/10/2006 10:35		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
3 H571G-1-AD J6E250379-3-SAMP	0.833sa,g	501.65sa,g	151.10g,in	0.2509g	RATA22595 06/13/06			30.9		7C 1501 6/26/06 7C 0646 6/27/06
					0.8168					
05/10/2006 10:50		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
4 H571M-1-AD J6E250379-4-SAMP	0.833sa,g	501.39sa,g	151.16g,in	0.2511g	RATA22596 06/13/06			31.4		1A 1501 6/26/06 1A 0646 6/27/06
					0.9194					
05/10/2006 11:25		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 4

Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added ICOC v4.8.24

6/16/2006 7:55:50 AM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Balance Id:1120373922,1120373922,1120

Pipet #: _____

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146452 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: 6146445, BXTE

Sep2 DT/Tm Tech:

Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
5 H571N-1-AD J6E250379-5-SAMP	0.833sa,g	500.72sa,g	151.73g,in	0.2524g	RATA22597 06/13/06	lin	31.4	3x50	IC 1507 6/26/06	
					0.8617				IC [illegible] 6/27/06	
05/10/2006 12:05		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
6 H571Q-1-AD J6E250379-6-SAMP	0.833sa,g	501.55sa,g	150.68g,in	0.2503g	RATA22598 06/13/06		30.9		1D 1507 6/26/06	
					0.9101				1D [illegible] 6/27/06	
05/10/2006 12:20		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
7 H571R-1-AD J6E250379-7-SAMP	0.833sa,g	503.75sa,g	150.41g,in	0.2487g	RATA22599 06/13/06		30.0		2A 1507 6/26/06	
					1.0079				2A [illegible] 6/27/06	
05/10/2006 12:25		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
8 H571T-1-AD J6E250379-8-SAMP	0.833sa,g	501.13sa,g	151.67g,in	0.2521g	RATA22600 06/13/06		29.8		2B 1507 6/26/06	
					0.9889				2B [illegible] 6/27/06	
05/10/2006 12:10		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2 ISV - Insufficient Volume for Analysis WO Cnt: 8
Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added ICOC v4.8.24

STL RICHLAND

6/16/2006 7:55:51 AM

Sample Preparation/Analysis

Balance Id:1120373922,1120373922,1120

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Pipet #:

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146452 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: 6146445, BXTE

Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
9 H571V-1-AD J6E250379-9-SAMP	0.833sa,g	501.34sa,g	152.00g,in	0.2526g	RATA22601 06/13/06	In	31.3	3X50	2C 150 6/26/06 2C Dark 6/26/06	
					0.9621					
05/10/2006 10:10		AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:	
10 H571X-1-AD J6E250379-10-SAMP	0.833sa,g	511.39sa,g	150.45g,in	0.2451g	RATA22602 06/13/06		31.2		2D 150 6/26/06 2D Dark 6/26/06	
					0.8678					
05/10/2006 10:30		AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:	
11 H5710-1-AD J6E250379-11-SAMP	0.833sa,g	506.21sa,g	151.09g,in	0.2486g	RATA22603 06/13/06		30.6		3A 150 6/26/06 3A Dark 6/26/06	
					0.9427					
05/10/2006 10:45		AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:	
12 H5711-1-AD J6E250379-12-SAMP	0.833sa,g	500.36sa,g	150.15g,in	0.25g	RATA22604 06/13/06		31.2		3B 150 6/26/06 3B Dark 6/26/06	
					0.8029					
05/10/2006 11:20		AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:	

6/16/2006 7:55:51 AM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 06/21/2006

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Balance Id:1120373922,1120373922,1120

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: HansenM,TamosaitisM

Batch: 6146452 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: 6146445, BXTE

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
13H5712-1-AD J6E250379-13-SAMP	0.833sa,g	500.63sa,g	150.88g,in	0.251g	RATA22605 06/13/06	0.7756	in	29.7	3x50	3C 1501 6/26/06 3C 0446 6/27/06
05/10/2006 12:00		AmtRec: FILTER	#Containers: 1				Scr:		Alpha:	Beta:
14H5713-1-AD J6E250379-14-SAMP	0.833sa,g	500.78sa,g	150.22g,in	0.2499g	RATA22606 06/13/06	0.9600		30.9		3D 1501 6/26/06 3D 0446 6/27/06
05/10/2006 12:15		AmtRec: FILTER	#Containers: 1				Scr:		Alpha:	Beta:
15H5714-1-AD J6E250379-15-SAMP	0.833sa,g	501.49sa,g	150.58g,in	0.2501g	RATA22607 06/13/06	0.8995		31.6		4A 1501 6/26/06 4A 0446 6/27/06
05/10/2006 10:15		AmtRec: FILTER	#Containers: 1				Scr:		Alpha:	Beta:
16H6A3J-1-AA-B J6E260000-452-BLK			1.00sa,in	1.00sa	RATA22608	0.8647		30.8		4B 1501 6/26/06 4B 0446 6/27/06
05/10/2006 10:20		AmtRec:	#Containers: 1				Scr:		Alpha:	Beta:

6/16/2006 7:55:51 AM

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146452 pCi/sampl

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,HansenM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
17H6A3J-1-AC-C J6E260000-452-LCS			1.00sa,in	1.00sa	RASC4119 6-9-06 0.9263	in	31.1	3x50	YC 1507 6/26/06 YC [illegible] 6/27/06	

05/10/2006 10:20 AmtRec: #Containers: 1 Scr: Alpha: Beta:

Comments: H5709-SAMP Comments

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H57091AD-SAMP Constituent List:

Ba-133	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20	RA-228	RDL:3.10E+00	pCi/sam	LCL:	UCL:	RPD:
RA-228DA	RDL:3.10E+00	pCi/sam	LCL:	UCL:	RPD:						

H6A3J1AA-BLK:

Ba-133	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20	RA-228	RDL:3.10E+00	pCi/sam	LCL:	UCL:	RPD:
RA-228DA	RDL:3.10E+00	pCi/sam	LCL:	UCL:	RPD:						

H6A3J1AC-LCS:

Ba-133	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20	Ra-226	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20
RA-228	RDL:1	pCi/sam	LCL:70	UCL:130	RPD:20	RA-228DA	RDL:1	pCi/sam	LCL:70	UCL:130	RPD:20

H57091AD-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

H6A3J1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

H6A3J1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

Clouseau
Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: **10-08242**
NCM Initiated By: Pam Anderson
Date Opened: 06/27/2006
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Sep
Tests: Ra-228 by GPC
Lot #'s (Sample #'s): J6E250379 (1,10,11,12,13,14,15,2,3,4,5, 6,7,8,9),
QC Batches: 6146452

Nonconformance: Other (describe in detail)
Subcategory: Other (explanation required)

Problem Description / Root Cause

Name	Date	Description
Pam Anderson	06/27/2006	1 The first of the three 50 miniute counts of the samples and QC was deleted. The count and the results indicated a short lived isotope, problably Rn 222, was interfering. 2 Because of the shorter count time the MDA of sample H571G1AD (3.4 pCi/l) did not meet CRDL.

Corrective Action

Name	Date	Corrective Action
Pam Anderson	06/27/2006	The possibility of Rn 222 and ways to reduce it have been discussed with the tech.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

Date Printed: 6/27/2006

6/27/2006 2:24:19 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/27/2005, 7/2/2006, Batch: '6146452', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6146452						
AC		CalcC	HansenM	6/13/2006 1:39:18 PM		
SC			HansenM	InPrep2	6/13/2006 1:39:18 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/15/2006 5:26:06 PM	RICH-RC-5016 REVISION 5
SC			tamosaitism	IsBatched	6/16/2006 7:55:48 AM	ICOC_RADCALC v4.8.24
SC			StringerR	CalcC	6/24/2006 4:16:40 PM	RICH-RC-5005 REVISION 5
SC			TamosaitisM	Sep2C	6/26/2006 12:26:42 PM	RICH-RC-5005 REVISION 4
SC			BlackCL	InCnt2	6/26/2006 12:27:50 PM	RICH-RD-0003 REVISION 4
SC			BlackCL	CalcC	6/27/2006 8:54:48 AM	RICH-RD-0003 REVISION 4
AC			HansenM	6/15/2006 5:26:06 PM		
AC			StringerR	6/24/2006 4:16:40 PM		
AC			TamosaitisM	6/26/2006 12:26:42		
AC			BlackCL	6/26/2006 12:27:50		
AC			BlackCL	6/27/2006 8:54:48		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 6

ICOCFractions v4.8.18

6/27/2006 2:24:19 PM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot uncert	Mda	Sample Date / Units	Expected	Yield	Volumes
31758	**9H570910**			**J6E2503791**	000450	FILTER	5/25/2006 10:00:00		5/10/2006 10:20:00 AM			
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**1.0298E+01**	2.869E+00	3.064E+00	8.319E+00	PCI/SA	1.0	1.0E+0	2.093E-2
BETA	BDS8		0	6/20/2006 2:03:16 PM	**4.4442E+01**	2.683E+00	4.815E+00	6.021E+00	PCI/SA	1.0	1.0E+0	3.346E-2
RA-226	BXTE		0	6/24/2006 1:25:01 PM	**2.9344E-01**	2.202E-01	2.222E-01	7.659E-01	PCI/SA	0.904	1.0E+0	2.504E-1
RA-228	BXTF		0	6/27/2006 6:50:22 AM	**8.0395E-01**	6.103E-01	6.32E-01	2.817E+00	PCI/SA	0.835	1.0E+0	2.504E-1
31758	**9H571010**			**J6E25037911**	P-0623	FILTER	5/25/2006 10:00:00		5/10/2006 10:45:00 AM			
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**7.1046E+01**	6.941E+00	1.016E+01	9.566E+00	PCI/SA	1.0	1.0E+0	2.073E-2
BETA	BDS8		0	6/20/2006 4:02:16 PM	**1.549E+02**	4.677E+00	1.173E+01	6.441E+00	PCI/SA	1.0	1.0E+0	3.266E-2
RA-226	BXTE		0	6/24/2006 2:02:00 PM	**1.3001E+00**	2.242E-01	2.606E-01	4.298E-01	PCI/SA	0.943	1.0E+0	2.486E-1
RA-228	BXTF		0	6/27/2006 6:51:14 AM	**6.8613E+00**	7.753E-01	9.222E-01	1.757E+00	PCI/SA	0.839	1.0E+0	2.486E-1
31758	**9H571110**			**J6E25037912**	P-0624	FILTER	5/25/2006 10:00:00		5/10/2006 11:20:00 AM			
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**5.3238E+00**	2.048E+00	2.122E+00	6.394E+00	PCI/SA	1.0	1.0E+0	2.113E-2
BETA	BDS8		0	6/20/2006 4:02:16 PM	**3.3468E+01**	2.452E+00	3.66E+00	6.231E+00	PCI/SA	1.0	1.0E+0	3.344E-2
RA-226	BXTE		0	6/24/2006 2:03:00 PM	**8.364E-01**	2.672E-01	2.798E-01	7.382E-01	PCI/SA	0.803	1.0E+0	2.5E-1
RA-228	BXTF		0	6/27/2006 6:51:14 AM	**2.9435E+00**	6.43E-01	6.788E-01	2.177E+00	PCI/SA	0.728	1.0E+0	2.5E-1
31758	**9H571210**			**J6E25037913**	P-0625	FILTER	5/25/2006 10:00:00		5/10/2006 12:00:00 PM			
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**6.673E+00**	2.279E+00	2.383E+00	6.679E+00	PCI/SA	1.0	1.0E+0	2.095E-2
BETA	BDS8		0	6/20/2006 4:02:16 PM	**3.475E+01**	2.592E+00	3.884E+00	6.718E+00	PCI/SA	1.0	1.0E+0	3.336E-2
RA-226	BXTE		0	6/24/2006 2:04:00 PM	**1.0922E-01**	2.375E-01	2.378E-01	8.892E-01	PCI/SA	0.776	1.0E+0	2.51E-1
RA-228	BXTF		0	6/27/2006 6:51:14 AM	**5.5446E+00**	8.4E-01	9.309E-01	2.413E+00	PCI/SA	0.67	1.0E+0	2.51E-1
31758	**9H571310**			**J6E25037914**	P-0626	FILTER	5/25/2006 10:00:00		5/10/2006 12:15:00 PM			
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**5.2958E+00**	1.995E+00	2.067E+00	6.113E+00	PCI/SA	1.0	1.0E+0	2.096E-2
BETA	BDS8		0	6/20/2006 4:05:03 PM	**2.5918E+01**	2.289E+00	2.94E+00	6.465E+00	PCI/SA	1.0	1.0E+0	3.415E-2
RA-226	BXTE		0	6/24/2006 2:02:03 PM	**1.5696E-02**	1.185E-01	1.185E-01	4.848E-01	PCI/SA	0.96	1.0E+0	2.499E-1
RA-228	BXTF		0	6/27/2006 6:51:14 AM	**4.1782E+00**	6.357E-01	7.052E-01	1.786E+00	PCI/SA	0.862	1.0E+0	2.499E-1
31758	**9H571410**			**J6E25037915**	P-0627	FILTER	5/25/2006 10:00:00		5/10/2006 10:15:00 AM			
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**2.5759E+00**	1.532E+00	1.554E+00	5.551E+00	PCI/SA	1.0	1.0E+0	2.096E-2
BETA	BDS8		0	6/20/2006 4:05:03 PM	**2.64E+01**	2.228E+00	3.165E+00	5.976E+00	PCI/SA	1.0	1.0E+0	3.324E-2
RA-226	BXTE		0	6/24/2006 2:44:00 PM	**2.3057E-01**	1.641E-01	1.66E-01	5.665E-01	PCI/SA	0.9	1.0E+0	2.501E-1
RA-228	BXTF		0	6/27/2006 6:51:23 AM	**6.9961E+00**	8.188E-01	9.699E-01	2.208E+00	PCI/SA	0.826	1.0E+0	2.501E-1
31758	**9H571F10**			**J6E2503792**	000451	FILTER	5/25/2006 10:00:00		5/10/2006 10:35:00 AM			
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**7.5196E+00**	2.329E+00	2.457E+00	6.451E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8		0	6/20/2006 2:03:16 PM	**3.3469E+01**	2.585E+00	3.53E+00	7.012E+00	PCI/SA	1.0	1.0E+0	3.334E-2
RA-226	BXTE		0	6/24/2006 1:24:02 PM	**5.6233E-02**	1.553E-01	1.554E-01	6.207E-01	PCI/SA	0.841	1.0E+0	2.49E-1
RA-228	BXTF		0	6/27/2006 6:50:22 AM	**2.162E+00**	7.172E-01	7.455E-01	2.967E+00	PCI/SA	0.758	1.0E+0	2.49E-1
31758	**9H571G10**			**J6E2503793**	000452	FILTER	5/25/2006 10:00:00		5/10/2006 10:50:00 AM			
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**8.3814E+00**	2.486E+00	2.635E+00	6.711E+00	PCI/SA	1.0	1.0E+0	2.077E-2
BETA	BDS8		0	6/20/2006 4:02:18 PM	**3.6893E+01**	2.583E+00	3.739E+00	6.749E+00	PCI/SA	1.0	1.0E+0	3.321E-2
RA-226	BXTE		0	6/24/2006 1:25:00 PM	**-3.8645E-01**	2.412E-01	2.443E-01	1.027E+00	PCI/SA	0.817	1.0E+0	2.509E-1
RA-228	BXTF		0	6/27/2006 6:50:22 AM	**9.5052E-01**	7.221E-01	7.62E-01	3.395E+00	PCI/SA	0.734	1.0E+0	2.509E-1
31758	**9H571M10**			**J6E2503794**	000453	FILTER	5/25/2006 10:00:00		5/10/2006 11:25:00 AM			
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**1.0018E+01**	2.543E+00	2.744E+00	6.144E+00	PCI/SA	1.0	1.0E+0	2.088E-2
BETA	BDS8		0	6/20/2006 4:02:18 PM	**4.4018E+01**	2.765E+00	4.159E+00	6.617E+00	PCI/SA	1.0	1.0E+0	3.324E-2
RA-226	BXTE		0	6/24/2006 1:26:00 PM	**1.6183E-01**	1.52E-01	1.53E-01	5.496E-01	PCI/SA	0.919	1.0E+0	2.511E-1
RA-228	BXTF		0	6/27/2006 6:50:33 AM	**7.1328E-01**	4.923E-01	5.638E-01	2.473E+00	PCI/SA	0.839	1.0E+0	2.511E-1
31758	**9H571N10**			**J6E2503795**	000454	FILTER	5/25/2006 10:00:00		5/10/2006 12:05:00 PM			
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**7.6052E+00**	2.27E+00	2.401E+00	5.544E+00	PCI/SA	1.0	1.0E+0	2.088E-2
BETA	BDS8		0	6/20/2006 4:02:18 PM	**3.0106E+01**	2.462E+00	3.228E+00	6.611E+00	PCI/SA	1.0	1.0E+0	3.355E-2
RA-226	BXTE		0	6/24/2006 1:24:00 PM	**2.1868E-01**	1.766E-01	1.782E-01	6.226E-01	PCI/SA	0.862	1.0E+0	2.524E-1
RA-228	BXTF		0	6/27/2006 6:50:33 AM	**2.6251E+00**	6.435E-01	6.849E-01	2.471E+00	PCI/SA	0.787	1.0E+0	2.524E-1
31758	**9H571Q10**			**J6E2503796**	000455	FILTER	5/25/2006 10:00:00		5/10/2006 12:20:00 PM			
ALPHA	BAS7		0	6/21/2006 11:30:00	**5.888E+00**	2.404E+00	2.481E+00	8.28E+00	PCI/SA	1.0	1.0E+0	2.091E-2

6146452, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H6A3J1AA=> , mat:FILTER | Air *wo:H6A3J1AC=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes	
BETA	BDS8	0		6/20/2006 4:02:18 PM	**3.9594E+01**	2.647E+00	3.775E+00	6.341E+00	PCI/SA		1.0	1.0E+0	3.357E-2
RA-226	BXTE	0		6/24/2006 1:26:00 PM	**-9.0912E-02**	2.105E-01	2.108E-01	8.933E-01	PCI/SA		0.91	1.0E+0	2.503E-1
RA-228	BXTF	0		6/27/2006 6:50:33 AM	**1.8827E+00**	6.448E-01	6.583E-01	2.619E+00	PCI/SA		0.818	1.0E+0	2.503E-1
31758	**9H571R10**			**J6E2503797**	000456	FILTER	5/25/2006 10:00:00	5/10/2006 12:25:00 PM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**-5.3806E-01**	1.049E+00	1.05E+00	6.462E+00	PCI/SA		1.0	1.0E+0	2.082E-2
BETA	BDS8	0		6/20/2006 4:02:22 PM	**1.8366E+00**	1.466E+00	1.472E+00	6.221E+00	PCI/SA		1.0	1.0E+0	3.334E-2
RA-226	BXTE	0		6/24/2006 1:25:00 PM	**2.9856E-01**	2.182E-01	2.203E-01	7.57E-01	PCI/SA		1.008	1.0E+0	2.487E-1
RA-228	BXTF	0		6/27/2006 6:51:02 AM	**8.3436E-01**	4.436E-01	4.612E-01	1.968E+00	PCI/SA		0.879	1.0E+0	2.487E-1
31758	**9H571T10**			**J6E2503798**	000457	FILTER	5/25/2006 10:00:00	5/10/2006 12:10:00 PM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**0.0E+00**	0.0E+00	1.22E+00	6.687E+00	PCI/SA		1.0	1.0E+0	2.083E-2
BETA	BDS8	0		6/20/2006 4:02:22 PM	**1.6761E+00**	1.28E+00	1.292E+00	5.419E+00	PCI/SA		1.0	1.0E+0	3.393E-2
RA-226	BXTE	0		6/24/2006 2:04:01 PM	**3.0013E-01**	1.81E-01	1.835E-01	6.023E-01	PCI/SA		0.989	1.0E+0	2.521E-1
RA-228	BXTF	0		6/27/2006 6:51:02 AM	**2.3461E+00**	5.319E-01	5.676E-01	1.821E+00	PCI/SA		0.857	1.0E+0	2.521E-1
31758	**9H571V10**			**J6E2503799**	P-0621	FILTER	5/25/2006 10:00:00	5/10/2006 10:10:00 AM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**4.2238E+00**	1.84E+00	1.89E+00	6.065E+00	PCI/SA		1.0	1.0E+0	2.113E-2
BETA	BDS8	0		6/20/2006 4:02:22 PM	**2.8114E+01**	2.298E+00	2.998E+00	6.19E+00	PCI/SA		1.0	1.0E+0	3.331E-2
RA-226	BXTE	0		6/24/2006 2:02:00 PM	**1.716E-01**	2.16E-01	2.168E-01	7.836E-01	PCI/SA		0.962	1.0E+0	2.526E-1
RA-228	BXTF	0		6/27/2006 6:51:02 AM	**2.0975E+00**	5.256E-01	5.522E-01	1.86E+00	PCI/SA		0.875	1.0E+0	2.526E-1
31758	**9H571X10**			**J6E25037910**	P-0622	FILTER	5/25/2006 10:00:00	5/10/2006 10:30:00 AM					
ALPHA	BAS7	0		6/21/2006 11:30:00	**6.6226E+00**	2.172E+00	2.277E+00	5.66E+00	PCI/SA		1.0	1.0E+0	2.046E-2
BETA	BDS8	0		6/20/2006 4:02:22 PM	**2.6877E+01**	2.285E+00	2.952E+00	6.192E+00	PCI/SA		1.0	1.0E+0	3.167E-2
RA-226	BXTE	0		6/24/2006 2:04:01 PM	**3.3431E-02**	1.685E-01	1.685E-01	6.735E-01	PCI/SA		0.868	1.0E+0	2.451E-1
RA-228	BXTF	0		6/27/2006 6:51:02 AM	**6.8745E-01**	4.566E-01	4.762E-01	2.112E+00	PCI/SA		0.787	1.0E+0	2.451E-1
31758	**H6A3J1AB**			**J6E260000452**	INTRA-LAB BLANK	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM					
RA-228	BXTF	0	B	6/27/2006 6:51:23 AM	**3.9461E-01**	1.349E-01	1.394E-01	5.353E-01	PCI/SA		0.774	1.0E+0	1.0E+0
31758	**H6A3J1CS**			**J6E260000452**	INTRA-LAB CHECK	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM					
RA-228	BXTF	0	S	6/27/2006 6:51:23 AM	**4.9065E+00**	3.076E-01	4.623E-01	4.778E-01	PCI/SA	5.1208E+00	0.837	1.0E+0	1.0E+0

6146452, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H6A3J1AA=> , mat:FILTER | Air *wo:H6A3J1AC=> , mat:FILTER | Air.

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Results

6/27/2006 12:19:19 PM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Ra-228 by GPC				Ra-226/Ra-228 Deem With Out Blk Subt.										
Calc	TF	FILTER	H57091AD	RA-228	3.99E+00	(1.05E+00)		PCI/SA	R	1.56E+00	3.41E+00		84%	
Calc	TF	FILTER	H57091AD	RA-228	1.27E+00	(8.89E-01)	U4	PCI/SA	R	1.73E+00	3.78E+00		84%	
Calc	TF	FILTER	H57091AD	RA-228	3.36E-01	(8.99E-01)	U4	PCI/SA	R	1.91E+00	4.19E+00		84%	
Calc	TF	FILTER	H57091AD	RA-228	8.04E-01	(6.32E-01)	U4	PCI/SA	A	1.29E+00	2.82E+00		84%	
Calc	TF	FILTER	H57091AD	RA-228	1.16E+01	(6.02E+00)		PCI/SA	R	1.12E+01	2.44E+01		84%	
Calc	TF	FILTER	H571F1AD	RA-228	7.12E+00	(1.39E+00)		PCI/SA	R	1.63E+00	3.59E+00		76%	
Calc	TF	FILTER	H571F1AD	RA-228	2.82E+00	(1.07E+00)		PCI/SA	R	1.81E+00	3.98E+00		76%	
Calc	TF	FILTER	H571F1AD	RA-228	1.50E+00	(1.04E+00)	U4	PCI/SA	R	2.01E+00	4.41E+00		76%	
Calc	TF	FILTER	H571F1AD	RA-228	2.16E+00	(7.45E-01)		PCI/SA	A	1.35E+00	2.97E+00		76%	
Calc	TF	FILTER	H571F1AD	RA-228	-4.71E+00	(5.37E+00)	U4	PCI/SA	R	1.25E+01	2.74E+01		76%	
Calc	TF	FILTER	H571G1AD	RA-228	3.33E+00	(1.13E+00)		PCI/SA	R	1.88E+00	4.10E+00		73%	
Calc	TF	FILTER	H571G1AD	RA-228	1.86E+00	(1.10E+00)		PCI/SA	R	2.09E+00	4.55E+00		73%	
Calc	TF	FILTER	H571G1AD	RA-228	3.90E-02	(1.06E+00)	U4	PCI/SA	R	2.32E+00	5.05E+00		73%	
Calc	TF	FILTER	H571G1AD	RA-228	9.51E-01	(7.62E-01)	U4	PCI/SA	A	1.56E+00	3.40E+00		73%	
Calc	TF	FILTER	H571G1AD	RA-228	3.72E+00	(6.25E+00)	U4	PCI/SA	R	1.31E+01	2.86E+01		73%	
Calc	TF	FILTER	H571M1AD	RA-228	2.86E+00	(8.77E-01)		PCI/SA	R	1.35E+00	2.99E+00		84%	
Calc	TF	FILTER	H571M1AD	RA-228	2.47E+00	(9.06E-01)		PCI/SA	R	1.50E+00	3.32E+00		84%	
Calc	TF	FILTER	H571M1AD	RA-228	-1.04E+00	(6.71E-01)	U4	PCI/SA	R	1.66E+00	3.68E+00		84%	
Calc	TF	FILTER	H571M1AD	RA-228	7.13E-01	(5.64E-01)	U4	PCI/SA	A	1.12E+00	2.47E+00		84%	
Calc	TF	FILTER	H571M1AD	RA-228	-3.39E+00	(4.06E+00)	U4	PCI/SA	R	9.53E+00	2.11E+01		84%	
Calc	TF	FILTER	H571N1AD	RA-228	4.99E+00	(1.09E+00)		PCI/SA	R	1.34E+00	2.99E+00		79%	
Calc	TF	FILTER	H571N1AD	RA-228	3.76E+00	(1.04E+00)		PCI/SA	R	1.49E+00	3.31E+00		79%	
Calc	TF	FILTER	H571N1AD	RA-228	1.49E+00	(8.93E-01)		PCI/SA	R	1.65E+00	3.68E+00		79%	
Calc	TF	FILTER	H571N1AD	RA-228	2.63E+00	(6.85E-01)		PCI/SA	A	1.11E+00	2.47E+00		79%	
Calc	TF	FILTER	H571N1AD	RA-228	2.10E+01	(6.46E+00)		PCI/SA	R	9.85E+00	2.19E+01		79%	
Calc	TF	FILTER	H571Q1AD	RA-228	5.41E+00	(1.15E+00)		PCI/SA	R	1.44E+00	3.17E+00		82%	
Calc	TF	FILTER	H571Q1AD	RA-228	1.66E+00	(8.70E-01)		PCI/SA	R	1.59E+00	3.51E+00		82%	
Calc	TF	FILTER	H571Q1AD	RA-228	2.11E+00	(9.89E-01)		PCI/SA	R	1.77E+00	3.90E+00		82%	
Calc	TF	FILTER	H571Q1AD	RA-228	1.88E+00	(6.58E-01)		PCI/SA	A	1.19E+00	2.62E+00		82%	
Calc	TF	FILTER	H571Q1AD	RA-228	8.99E+00	(5.38E+00)		PCI/SA	R	1.01E+01	2.22E+01		82%	
Calc	TF	FILTER	H571R1AD	RA-228	3.13E+00	(8.44E-01)		PCI/SA	R	1.02E+00	2.38E+00		88%	
Calc	TF	FILTER	H571R1AD	RA-228	1.38E+00	(6.91E-01)		PCI/SA	R	1.13E+00	2.64E+00		88%	
Calc	TF	FILTER	H571R1AD	RA-228	2.90E-01	(6.11E-01)	U4	PCI/SA	R	1.25E+00	2.93E+00		88%	
Calc	TF	FILTER	H571R1AD	RA-228	8.34E-01	(4.61E-01)		PCI/SA	A	8.43E-01	1.97E+00		88%	
Calc	TF	FILTER	H571R1AD	RA-228	8.95E+00	(4.33E+00)		PCI/SA	R	6.91E+00	1.62E+01		88%	
Calc	TF	FILTER	H571T1AD	RA-228	2.48E+00	(7.41E-01)		PCI/SA	R	9.35E-01	2.20E+00		86%	
Calc	TF	FILTER	H571T1AD	RA-228	3.30E+00	(8.85E-01)		PCI/SA	R	1.04E+00	2.44E+00		86%	
Calc	TF	FILTER	H571T1AD	RA-228	1.40E+00	(7.11E-01)		PCI/SA	R	1.15E+00	2.71E+00		86%	

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:39
RADCALC v4.8.24
STL Richland

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	TF	FILTER	H571T1AD	RA-228	2.35E+00	(5.68E-01)		PCI/SA	A	7.73E-01	1.82E+00		86%	
Calc	TF	FILTER	H571T1AD	RA-228	0.00E+00	(3.46E+00)	U4	PCI/SA	R	7.59E+00	1.75E+01		86%	
Calc	TF	FILTER	H571V1AD	RA-228	3.38E+00	(8.53E-01)		PCI/SA	R	9.56E-01	2.25E+00		88%	
Calc	TF	FILTER	H571V1AD	RA-228	2.64E+00	(8.18E-01)		PCI/SA	R	1.06E+00	2.49E+00		88%	
Calc	TF	FILTER	H571V1AD	RA-228	1.55E+00	(7.42E-01)		PCI/SA	R	1.18E+00	2.77E+00		88%	
Calc	TF	FILTER	H571V1AD	RA-228	2.10E+00	(5.52E-01)		PCI/SA	A	7.91E-01	1.86E+00		88%	
Calc	TF	FILTER	H571V1AD	RA-228	-7.75E-01	(3.13E+00)	U4	PCI/SA	R	7.10E+00	1.66E+01		88%	
Calc	TF	FILTER	H571X1AD	RA-228	3.06E+00	(8.80E-01)		PCI/SA	R	1.09E+00	2.55E+00		79%	
Calc	TF	FILTER	H571X1AD	RA-228	1.22E+00	(7.13E-01)		PCI/SA	R	1.21E+00	2.83E+00		79%	
Calc	TF	FILTER	H571X1AD	RA-228	1.51E-01	(6.31E-01)	U4	PCI/SA	R	1.34E+00	3.14E+00		79%	
Calc	TF	FILTER	H571X1AD	RA-228	6.87E-01	(4.76E-01)	U4	PCI/SA	A	8.99E-01	2.11E+00		79%	
Calc	TF	FILTER	H571X1AD	RA-228	4.86E+00	(4.45E+00)	U4	PCI/SA	R	8.40E+00	1.95E+01		79%	
Calc	TF	FILTER	H57101AD	RA-228	1.45E+01	(2.04E+00)		PCI/SA	R	8.98E-01	2.12E+00		84%	
Calc	TF	FILTER	H57101AD	RA-228	6.58E+00	(1.24E+00)		PCI/SA	R	9.96E-01	2.36E+00		84%	
Calc	TF	FILTER	H57101AD	RA-228	7.15E+00	(1.36E+00)		PCI/SA	R	1.10E+00	2.61E+00		84%	
Calc	TF	FILTER	H57101AD	RA-228	6.86E+00	(9.22E-01)		PCI/SA	A	7.43E-01	1.76E+00		84%	
Calc	TF	FILTER	H57101AD	RA-228	3.01E+01	(6.57E+00)		PCI/SA	R	6.06E+00	1.45E+01		84%	
Calc	TF	FILTER	H57111AD	RA-228	1.02E+01	(1.65E+00)		PCI/SA	R	1.13E+00	2.63E+00		73%	
Calc	TF	FILTER	H57111AD	RA-228	3.03E+00	(9.37E-01)		PCI/SA	R	1.26E+00	2.92E+00		73%	
Calc	TF	FILTER	H57111AD	RA-228	2.86E+00	(9.82E-01)		PCI/SA	R	1.39E+00	3.24E+00		73%	
Calc	TF	FILTER	H57111AD	RA-228	2.94E+00	(6.79E-01)		PCI/SA	A	9.37E-01	2.18E+00		73%	
Calc	TF	FILTER	H57111AD	RA-228	1.68E+01	(5.68E+00)		PCI/SA	R	7.98E+00	1.86E+01		73%	
Calc	TF	FILTER	H57121AD	RA-228	1.33E+01	(2.03E+00)		PCI/SA	R	1.26E+00	2.92E+00		67%	
Calc	TF	FILTER	H57121AD	RA-228	5.61E+00	(1.29E+00)		PCI/SA	R	1.39E+00	3.24E+00		67%	
Calc	TF	FILTER	H57121AD	RA-228	5.48E+00	(1.35E+00)		PCI/SA	R	1.55E+00	3.59E+00		67%	
Calc	TF	FILTER	H57121AD	RA-228	5.54E+00	(9.31E-01)		PCI/SA	A	1.04E+00	2.41E+00		67%	
Calc	TF	FILTER	H57121AD	RA-228	5.04E+00	(4.99E+00)	U4	PCI/SA	R	9.64E+00	2.21E+01		67%	
Calc	TF	FILTER	H57131AD	RA-228	9.00E+00	(1.44E+00)		PCI/SA	R	9.21E-01	2.16E+00		86%	
Calc	TF	FILTER	H57131AD	RA-228	4.51E+00	(1.01E+00)		PCI/SA	R	1.02E+00	2.40E+00		86%	
Calc	TF	FILTER	H57131AD	RA-228	3.85E+00	(9.88E-01)		PCI/SA	R	1.13E+00	2.66E+00		86%	
Calc	TF	FILTER	H57131AD	RA-228	4.18E+00	(7.05E-01)		PCI/SA	A	7.62E-01	1.79E+00		86%	
Calc	TF	FILTER	H57131AD	RA-228	9.81E+00	(4.43E+00)		PCI/SA	R	7.07E+00	1.64E+01		86%	
Calc	TF	FILTER	H57141AD	RA-228	1.91E+01	(2.51E+00)		PCI/SA	R	1.17E+00	2.67E+00		83%	
Calc	TF	FILTER	H57141AD	RA-228	8.58E+00	(1.50E+00)		PCI/SA	R	1.30E+00	2.96E+00		83%	
Calc	TF	FILTER	H57141AD	RA-228	5.42E+00	(1.24E+00)		PCI/SA	R	1.44E+00	3.28E+00		83%	
Calc	TF	FILTER	H57141AD	RA-228	7.00E+00	(9.70E-01)		PCI/SA	A	9.71E-01	2.21E+00		83%	
Calc	TF	FILTER	H57141AD	RA-228	1.09E+01	(5.32E+00)		PCI/SA	R	9.26E+00	2.08E+01		83%	
Calc	TF	FILTER	H6A3J1AA	RA-228	1.19E+00	(2.63E-01)		PCI/SA	R	2.79E-01	6.47E-01	B	77%	
Calc	TF	FILTER	H6A3J1AA	RA-228	5.09E-01	(2.03E-01)		PCI/SA	R	3.09E-01	7.18E-01	B	77%	

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:78
RADCALC v4.8.24
STL Richland

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	TF	FILTER	**H6A3J1AA**	RA-228	**2.80E-01**	**(1.91E-01)**	**U4**	PCI/SA	R	3.43E-01	7.96E-01	**B**	77%	
Calc	TF	FILTER	**H6A3J1AA**	RA-228	**3.95E-01**	**(1.39E-01)**		PCI/SA	A	2.31E-01	5.35E-01	**B**	77%	
Calc	TF	FILTER	**H6A3J1AA**	RA-228	**8.83E-01**	**(1.08E+00)**	**U4**	PCI/SA	R	2.14E+00	4.91E+00	**B**	77%	
Calc	TF	FILTER	**H6A3J1AC**	RA-228	**6.23E+00**	**(7.62E-01)**		PCI/SA	R	2.48E-01	5.78E-01	**S**	84%	122%
Calc	TF	FILTER	**H6A3J1AC**	RA-228	**5.30E+00**	**(6.85E-01)**		PCI/SA	R	2.75E-01	6.41E-01	**S**	84%	104%
Calc	TF	FILTER	**H6A3J1AC**	RA-228	**4.51E+00**	**(6.21E-01)**		PCI/SA	R	3.05E-01	7.11E-01	**S**	84%	88%
Calc	TF	FILTER	**H6A3J1AC**	RA-228	**4.91E+00**	**(4.62E-01)**		PCI/SA	A	2.05E-01	4.78E-01	**S**	84%	96%
Calc	TF	FILTER	**H6A3J1AC**	RA-228	**4.53E+00**	**(1.38E+00)**		PCI/SA	R	1.86E+00	4.30E+00	**S**	84%	89%

P Anderson
6-27-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC - Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:85
RADCALC v4.8.24
STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

Detailed Report

6/27/2006 12:19:19 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	TF	FILTER	*STLE	Ra228WoBS	**H57091AD**	**PCI/SA**		05/10/06 10:20	06/27/06 06:50	06/19/06 10:45	RATA22593	1	1.00 SA	
536403,000450					,J6E250379-1 v4.8.24		FILTER			31.8	06/26/06 10:45	RATA22593 Alq	90%	0.250361 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:25	RA-228	74	300	GPC7A	1	N	N	5.1750E-01	1.0000E+00	N	84%	N		1.2945E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.196E-02)	(0.000E+00)		7%			(0.000E+00)	3.994229		
1	06/26/06 14:21	RA-228	48	300	GPC7A	1	N	N	5.1750E-01	1.0000E+00	N	84%	N		1.4361E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.196E-02)	(0.000E+00)		7%			(0.000E+00)	3.994229		
2	06/26/06 15:16	RA-228	40	300	GPC7A	1	N	N	5.1750E-01	1.0000E+00	N	84%	N		1.5932E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.196E-02)	(0.000E+00)		7%			(0.000E+00)	3.994229		
3	06/27/06 06:50	RA-228	53	305	GPC7A	1	N	N	5.1750E-01	1.0000E+00	N	84%	N		9.2087E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.196E-02)	(0.000E+00)		7%			(0.000E+00)	3.994229		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**3.985516**		7.30000E-01	2.186146	2.186146	1.00 SA	84%		3.405194		
				(1.049165)		(1.7741E-01)	(0.561621)	(0.561621)	(0.028284)			1.555565		
	06/27/06	RA-228	R	**1.271943**	**U4**	2.10000E-01	0.697689	0.697689	1.00 SA	84%		3.777708		
				(0.888655)		(1.4517E-01)	(0.485797)	(0.485797)	(0.028284)			1.725738		
	06/27/06	RA-228	R	**0.335963**	**U4**	5.00000E-02	0.184283	0.184283	1.00 SA	84%		4.190842		
				(0.89899)		(1.3370E-01)	(0.493003)	(0.493003)	(0.028284)			1.914466		
	06/27/06	RA-228	A	**0.803953**	**U4**	1.30000E-01	0.440986	0.440986	1.00 SA	84%		2.817308		
				(0.632038)		(9.8679E-02)	(0.346067)	(0.346067)	(0.02)			1.287006		
	06/27/06	RA-228	R	**11.554139**		2.97500E-01	6.337706	6.337706	1.00 SA	84%		24.406717		
				(6.018178)		(1.5201E-01)	(3.280969)	(3.280969)	(0.028284)			11.157489		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571F1AD**	**PCI/SA**		05/10/06 10:35	06/27/06 06:50	06/19/06 10:45	RATA22594	1	1.00 SA	
536403,000451					,J6E250379-2 v4.8.24		FILTER			31.0	06/26/06 10:45	RATA22594 Alq	84%	0.24904 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:25	RA-228	93	271	GPC7B	1	N	N	5.1947E-01	1.0000E+00	N	76%	N		1.2945E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.257E-02)	(0.000E+00)		6%			(0.000E+00)	4.015427		
1	06/26/06 14:21	RA-228	55	271	GPC7B	1	N	N	5.1947E-01	1.0000E+00	N	76%	N		1.4361E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.257E-02)	(0.000E+00)		6%			(0.000E+00)	4.015427		
2	06/26/06 15:16	RA-228	44	271	GPC7B	1	N	N	5.1947E-01	1.0000E+00	N	76%	N		1.5932E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.257E-02)	(0.000E+00)		6%			(0.000E+00)	4.015427		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:2

RADCALC v4.8.24
STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 12:19:20 PM

3	06/27/06 06:50	RA-228	34	316	GPC7B	1	N	N	5.1947E-01	1.0000E+00	N	76%	N	9.2087E+00	4.5045E-01	1.0133E+00
			50	400			N		(1.257E-02)	(0.000E+00)		6%		(0.000E+00)	4.015427	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**7.121938**		1.18250E+00	3.885934	3.885934	1.00 SA	76%		3.58645		
				(1.390157)		(1.9721E-01)	(0.724917)	(0.724917)	(0.028284)			1.630976		
	06/27/06	RA-228	R	**2.822996**		4.22500E-01	1.540308	1.540308	1.00 SA	76%		3.978792		
				(1.067597)		(1.5393E-01)	(0.575752)	(0.575752)	(0.028284)			1.809398		
	06/27/06	RA-228	R	**1.501003**	U4	2.02500E-01	0.81899	0.81899	1.00 SA	76%		4.413917		
				(1.040784)		(1.3890E-01)	(0.565929)	(0.565929)	(0.028284)			2.007276		
	06/27/06	RA-228	A	**2.161999**		3.12500E-01	1.179649	1.179649	1.00 SA	76%		2.967271		
				(0.745485)		(1.0367E-01)	(0.40366)	(0.40366)	(0.02)			1.349398		
	06/27/06	RA-228	R	**-4.712796**	U4	-1.10000E-01	-2.571437	-2.571437	1.00 SA	76%		27.364032		
				(5.368195)		(1.2480E-01)	(2.925314)	(2.925314)	(0.028284)			12.528393		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571G1AD**	**PCI/SA**		05/10/06 10:50	06/27/06 06:50	06/19/06 10:45	RATA22595	1	1.00 SA	
536403,000452					,J6E250379-3 v4.8.24		FILTER			30.9	06/26/06 10:45	RATA22595 Alq	82%	0.250905 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:25	RA-228	67	326	GPC7C	1	N	N	5.0675E-01	1.0000E+00	N	73%	N		1.2945E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.091E-02)	(0.000E+00)		6%			(0.000E+00)	3.985578		
1	06/26/06 14:21	RA-228	54	326	GPC7C	1	N	N	5.0675E-01	1.0000E+00	N	73%	N		1.4361E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.091E-02)	(0.000E+00)		6%			(0.000E+00)	3.985578		
2	06/26/06 15:16	RA-228	41	326	GPC7C	1	N	N	5.0675E-01	1.0000E+00	N	73%	N		1.5932E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.091E-02)	(0.000E+00)		6%			(0.000E+00)	3.985578		
3	06/27/06 06:50	RA-228	43	311	GPC7C	1	N	N	5.0675E-01	1.0000E+00	N	73%	N		9.2087E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.091E-02)	(0.000E+00)		6%			(0.000E+00)	3.985578		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**3.325223**		5.25000E-01	1.827932	1.827932	1.00 SA	73%		4.103467		
				(1.126603)		(1.6982E-01)	(0.610346)	(0.610346)	(0.028284)			1.881205		
	06/27/06	RA-228	R	**1.862061**		2.65000E-01	1.023607	1.023607	1.00 SA	73%		4.552369		
				(1.096499)		(1.5374E-01)	(0.599889)	(0.599889)	(0.028284)			2.087001		
	06/27/06	RA-228	R	**0.038975**	U4	5.00000E-03	0.021425	0.021425	1.00 SA	73%		5.050221		
				(1.058461)		(1.3578E-01)	(0.581853)	(0.581853)	(0.028284)			2.315238		
	06/27/06	RA-228	A	**0.950518**	U4	1.35000E-01	0.522516	0.522516	1.00 SA	73%		3.395028		
				(0.762012)		(1.0256E-01)	(0.417858)	(0.417858)	(0.02)			1.556427		
	06/27/06	RA-228	R	**3.717101**	U4	8.25000E-02	2.043354	2.043354	1.00 SA	73%		28.567763		
				(6.245212)		(1.3836E-01)	(3.431091)	(3.431091)	(0.028284)			13.070631		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 12:19:20 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571M1AD**	**PCI/SA**		05/10/06 11:25	06/27/06 06:50	06/19/06 10:45	RATA22596	1	1.00 SA	
536403,000453					,J6E250379-4 v4.8.24		FILTER			31.4	06/26/06 10:45	RATA22596 Alq	92%	0.251134 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	57	240	GPC1A	1	N	N	5.2887E-01	1.0000E+00	N	84%	N		1.2950E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.443E-02)	(0.000E+00)		7%			(0.000E+00)	3.981931		
1	06/26/06 14:21	RA-228	51	240	GPC1A	1	N	N	5.2887E-01	1.0000E+00	N	84%	N		1.4366E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.443E-02)	(0.000E+00)		7%			(0.000E+00)	3.981931		
2	06/26/06 15:16	RA-228	22	240	GPC1A	1	N	N	5.2887E-01	1.0000E+00	N	84%	N		1.5937E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.443E-02)	(0.000E+00)		7%			(0.000E+00)	3.981931		
3	06/27/06 06:50	RA-228	25	236	GPC1A	1	N	N	5.2887E-01	1.0000E+00	N	84%	N		9.2119E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.443E-02)	(0.000E+00)		7%			(0.000E+00)	3.981931		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**2.863411**		5.40000E-01	1.57552	1.57552	1.00 SA	84%		2.988457		
				(0.876868)		(1.5588E-01)	(0.47391)	(0.47391)	(0.028284)			1.35133		
	06/27/06	RA-228	R	**2.470732**		4.20000E-01	1.359458	1.359458	1.00 SA	84%		3.315381		
				(0.90644)		(1.4799E-01)	(0.492594)	(0.492594)	(0.028284)			1.49916		
	06/27/06	RA-228	R	**-1.044165**	**U4**	-1.60000E-01	-0.574526	-0.574526	1.00 SA	84%		3.677955		
				(0.670862)		(1.0149E-01)	(0.367646)	(0.367646)	(0.028284)			1.663109		
	06/27/06	RA-228	A	**0.713283**	**U4**	1.30000E-01	0.392466	0.392466	1.00 SA	84%		2.472518		
				(0.563846)		(8.9722E-02)	(0.307332)	(0.307332)	(0.02)			1.118031		
	06/27/06	RA-228	R	**-3.394856**	**U4**	-9.00000E-02	-1.867934	-1.867934	1.00 SA	84%		21.097869		
				(4.055554)		(1.0712E-01)	(2.228885)	(2.228885)	(0.028284)			9.532366		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571N1AD**	**PCI/SA**		05/10/06 12:05	06/27/06 06:50	06/19/06 10:45	RATA22597	1	1.00 SA	
536403,000454					,J6E250379-5 v4.8.24		FILTER			31.4	06/26/06 10:45	RATA22597 Alq	86%	0.252419 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	69	203	GPC1C	1	N	N	5.2100E-01	1.0000E+00	N	79%	N		1.2950E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.166E-02)	(0.000E+00)		6%			(0.000E+00)	3.961672		
1	06/26/06 14:21	RA-228	55	203	GPC1C	1	N	N	5.2100E-01	1.0000E+00	N	79%	N		1.4366E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.166E-02)	(0.000E+00)		6%			(0.000E+00)	3.961672		
2	06/26/06 15:16	RA-228	36	203	GPC1C	1	N	N	5.2100E-01	1.0000E+00	N	79%	N		1.5937E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.166E-02)	(0.000E+00)		6%			(0.000E+00)	3.961672		
3	06/27/06 06:50	RA-228	53	217	GPC1C	1	N	N	5.2100E-01	1.0000E+00	N	79%	N		9.2119E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.166E-02)	(0.000E+00)		6%			(0.000E+00)	3.961672		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:5

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 12:19:20 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**4.985357**		8.72500E-01	2.75712	2.75712	1.00 SA	79%		2.986497		
				(1.09364)		(1.6991E-01)	(0.583725)	(0.583725)	(0.028284)			1.339198		
	06/27/06	RA-228	R	**3.755828**		5.92500E-01	2.077137	2.077137	1.00 SA	79%		3.313208		
				(1.038695)		(1.5254E-01)	(0.561914)	(0.561914)	(0.028284)			1.4857		
	06/27/06	RA-228	R	**1.494339**		2.12500E-01	0.826435	0.826435	1.00 SA	79%		3.675544		
				(0.893098)		(1.2517E-01)	(0.491635)	(0.491635)	(0.028284)			1.648178		
	06/27/06	RA-228	A	**2.625084**		4.02500E-01	1.451786	1.451786	1.00 SA	79%		2.470897		
				(0.684929)		(9.8663E-02)	(0.373314)	(0.373314)	(0.02)			1.107993		
	06/27/06	RA-228	R	**21.034398**		5.17500E-01	11.632941	11.632941	1.00 SA	79%		21.890387		
				(6.463651)		(1.5019E-01)	(3.511662)	(3.511662)	(0.028284)			9.84953		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571Q1AD**	**PCI/SA**		05/10/06 12:20	06/27/06 06:50	06/19/06 10:45	RATA22598	1	1.00 SA	
536403,000455					,J6E250379-6 v4.8.24		FILTER			30.9	06/26/06 10:45	RATA22598 Alq	91%	0.250257 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	82	258	GPC1D	1	N	N	5.3150E-01	1.0000E+00	N	82%	N		1.2950E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	3.995891		
1	06/26/06 14:21	RA-228	46	258	GPC1D	1	N	N	5.3150E-01	1.0000E+00	N	82%	N		1.4366E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	3.995891		
2	06/26/06 15:16	RA-228	48	258	GPC1D	1	N	N	5.3150E-01	1.0000E+00	N	82%	N		1.5937E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	3.995891		
3	06/27/06 06:50	RA-228	43	251	GPC1D	1	N	N	5.3150E-01	1.0000E+00	N	82%	N		9.2119E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	3.995891		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**5.4083**		9.95000E-01	2.965422	2.965422	1.00 SA	82%		3.165288		
				(1.148818)		(1.8551E-01)	(0.606436)	(0.606436)	(0.028284)			1.436195		
	06/27/06	RA-228	R	**1.658276**		2.75000E-01	0.909249	0.909249	1.00 SA	82%		3.511557		
				(0.869592)		(1.4147E-01)	(0.473936)	(0.473936)	(0.028284)			1.593309		
	06/27/06	RA-228	R	**2.107209**		3.15000E-01	1.155403	1.155403	1.00 SA	82%		3.895584		
				(0.988622)		(1.4427E-01)	(0.537992)	(0.537992)	(0.028284)			1.767555		
	06/27/06	RA-228	A	**1.882743**		2.95000E-01	1.032326	1.032326	1.00 SA	82%		2.61882		
				(0.658324)		(1.0103E-01)	(0.358487)	(0.358487)	(0.02)			1.188245		
	06/27/06	RA-228	R	**8.98979**		2.32500E-01	4.929188	4.929188	1.00 SA	82%		22.23763		
				(5.375638)		(1.3700E-01)	(2.93388)	(2.93388)	(0.028284)			10.076956		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:7

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 12:19:20 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571R1AD**	**PCI/SA**		05/10/06 12:25	06/27/06 06:51	06/19/06 10:45	RATA22599	1	1.00 SA	
536403,000456					,J6E250379-7 v4.8.24		FILTER			30.0	06/26/06 10:45	RATA22599 Alq	101%	0.248718 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	37	97	GPC2A	1	N	N	4.3005E-01	1.0000E+00	N	88%	N		1.2959E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.190E-02)	(0.000E+00)		7%			(0.000E+00)	4.020623		
1	06/26/06 14:21	RA-228	22	97	GPC2A	1	N	N	4.3005E-01	1.0000E+00	N	88%	N		1.4376E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.190E-02)	(0.000E+00)		7%			(0.000E+00)	4.020623		
2	06/26/06 15:16	RA-228	14	97	GPC2A	1	N	N	4.3005E-01	1.0000E+00	N	88%	N		1.5949E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.190E-02)	(0.000E+00)		7%			(0.000E+00)	4.020623		
3	06/27/06 06:51	RA-228	21	88	GPC2A	1	N	N	4.3005E-01	1.0000E+00	N	88%	N		9.2202E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.190E-02)	(0.000E+00)		7%			(0.000E+00)	4.020623		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**3.129812**		4.97500E-01	1.705551	1.705551	1.00 SA	88%		2.378248		
				(0.843959)		(1.2412E-01)	(0.449347)	(0.449347)	(0.028284)			1.019241		
	06/27/06	RA-228	R	**1.378368**		1.97500E-01	0.751124	0.751124	1.00 SA	88%		2.638336		
				(0.691404)		(9.6986E-02)	(0.374293)	(0.374293)	(0.028284)			1.130706		
	06/27/06	RA-228	R	**0.290346**	U4	3.75000E-02	0.15822	0.15822	1.00 SA	88%		2.926959		
				(0.61068)		(7.8780E-02)	(0.332658)	(0.332658)	(0.028284)			1.254401		
	06/27/06	RA-228	A	**0.834357**		1.17500E-01	0.454672	0.454672	1.00 SA	88%		1.967629		
				(0.46124)		(6.2475E-02)	(0.250378)	(0.250378)	(0.02)			0.843263		
	06/27/06	RA-228	R	**8.952114**		2.00000E-01	4.878341	4.878341	1.00 SA	88%		16.232246		
				(4.332455)		(9.4604E-02)	(2.344225)	(2.344225)	(0.028284)			6.907213		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571T1AD**	**PCI/SA**		05/10/06 12:10	06/27/06 06:51	06/19/06 10:45	RATA22600	1	1.00 SA	
536403,000457					,J6E250379-8 v4.8.24		FILTER			29.8	06/26/06 10:45	RATA22600 Alq	99%	0.252112 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	31	86	GPC2B	1	N	N	4.4691E-01	1.0000E+00	N	86%	N		1.2959E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.054E-02)	(0.000E+00)		7%			(0.000E+00)	3.966484		
1	06/26/06 14:21	RA-228	35	86	GPC2B	1	N	N	4.4691E-01	1.0000E+00	N	86%	N		1.4376E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.054E-02)	(0.000E+00)		7%			(0.000E+00)	3.966484		
2	06/26/06 15:16	RA-228	20	86	GPC2B	1	N	N	4.4691E-01	1.0000E+00	N	86%	N		1.5949E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.054E-02)	(0.000E+00)		7%			(0.000E+00)	3.966484		
3	06/27/06 06:51	RA-228	14	112	GPC2B	1	N	N	4.4691E-01	1.0000E+00	N	86%	N		9.2202E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.054E-02)	(0.000E+00)		7%			(0.000E+00)	3.966484		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:8

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 12:19:20 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**2.481774**		4.05000E-01	1.370866	1.370866	1.00 SA	86%		2.200634		
				(0.740932)		(1.1374E-01)	(0.401623)	(0.401623)	(0.028284)			0.934808		
	06/27/06	RA-228	R	**3.297022**		4.85000E-01	1.821187	1.821187	1.00 SA	86%		2.441298		
				(0.885046)		(1.2057E-01)	(0.477551)	(0.477551)	(0.028284)			1.037039		
	06/27/06	RA-228	R	**1.395206**		1.85000E-01	0.770675	0.770675	1.00 SA	86%		2.708366		
				(0.71102)		(9.2399E-02)	(0.390245)	(0.390245)	(0.028284)			1.150487		
	06/27/06	RA-228	A	**2.346114**		3.35000E-01	1.295931	1.295931	1.00 SA	86%		1.820681		
				(0.567639)		(7.5952E-02)	(0.308361)	(0.308361)	(0.02)			0.773407		
	06/27/06	RA-228	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	86%		17.534439		
				(3.460573)		(7.9373E-02)	(1.911528)	(1.911528)	(0.028284)			7.59019		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571V1AD**	**PCI/SA**		05/10/06 10:10	06/27/06 06:51	06/19/06 10:45	RATA22601	1	1.00 SA	
536403,P-0621					,J6E250379-9 v4.8.24		FILTER			31.3	06/26/06 10:45	RATA22601 Alq	96%	0.252555 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	38	87	GPC2C	1	N	N	4.2956E-01	1.0000E+00	N	88%	N		1.2959E+00	4.5045E-01	1.0133E+00	
			50	400			N		(9.343E-03)	(0.000E+00)		7%			(0.000E+00)	3.959531		
1	06/26/06 14:21	RA-228	30	87	GPC2C	1	N	N	4.2956E-01	1.0000E+00	N	88%	N		1.4376E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(9.343E-03)	(0.000E+00)		7%			(0.000E+00)	3.959531		
2	06/26/06 15:16	RA-228	21	87	GPC2C	1	N	N	4.2956E-01	1.0000E+00	N	88%	N		1.5949E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(9.343E-03)	(0.000E+00)		7%			(0.000E+00)	3.959531		
3	06/27/06 06:51	RA-228	11	95	GPC2C	1	N	N	4.2956E-01	1.0000E+00	N	88%	N		9.2202E+00	4.5045E-01	1.0133E+00	
			50	400			N		(9.343E-03)	(0.000E+00)		7%			(0.000E+00)	3.959531		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**3.378757**		5.42500E-01	1.869561	1.869561	1.00 SA	88%		2.247659		
				(0.852542)		(1.2547E-01)	(0.459348)	(0.459348)	(0.028284)			0.955615		
	06/27/06	RA-228	R	**2.642784**		3.82500E-01	1.462327	1.462327	1.00 SA	88%		2.493465		
				(0.81845)		(1.1200E-01)	(0.445012)	(0.445012)	(0.028284)			1.060122		
	06/27/06	RA-228	R	**1.552179**		2.02500E-01	0.858864	0.858864	1.00 SA	88%		2.76624		
				(0.74161)		(9.4571E-02)	(0.407377)	(0.407377)	(0.028284)			1.176095		
	06/27/06	RA-228	A	**2.097481**		2.92500E-01	1.160595	1.160595	1.00 SA	88%		1.859587		
				(0.552233)		(7.3293E-02)	(0.301659)	(0.301659)	(0.02)			0.790622		
	06/27/06	RA-228	R	**-0.775471**	**U4**	-1.75000E-02	-0.42909	-0.42909	1.00 SA	88%		16.603028		
				(3.132396)		(7.0666E-02)	(1.733067)	(1.733067)	(0.028284)			7.104859		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:10

RADCALC v4.8.24
STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 12:19:20 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571X1AD**	**PCI/SA**		05/10/06 10:30	06/27/06 06:51	06/19/06 10:45	RATA22602	1	1.00 SA	
536403,P-0622					,J6E250379-10 v4.8.24		FILTER			31.2	06/26/06 10:45	RATA22602 Alq	87%	0.245067 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	33	89	GPC2D	1	N	N	4.3773E-01	1.0000E+00	N	79%	N		1.2959E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.308E-02)	(0.000E+00)		6%			(0.000E+00)	4.080516		
1	06/26/06 14:21	RA-228	19	89	GPC2D	1	N	N	4.3773E-01	1.0000E+00	N	79%	N		1.4376E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.308E-02)	(0.000E+00)		6%			(0.000E+00)	4.080516		
2	06/26/06 15:16	RA-228	12	89	GPC2D	1	N	N	4.3773E-01	1.0000E+00	N	79%	N		1.5949E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.308E-02)	(0.000E+00)		6%			(0.000E+00)	4.080516		
3	06/27/06 06:51	RA-228	18	105	GPC2D	1	N	N	4.3773E-01	1.0000E+00	N	79%	N		9.2202E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.308E-02)	(0.000E+00)		6%			(0.000E+00)	4.080516		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**3.064888**		4.37500E-01	1.645615	1.645615	1.00 SA	79%		2.552745		
				(0.880124)		(1.1729E-01)	(0.463008)	(0.463008)	(0.028284)			1.08717		
	06/27/06	RA-228	R	**1.224024**		1.57500E-01	0.657209	0.657209	1.00 SA	79%		2.831916		
				(0.713084)		(9.0312E-02)	(0.381006)	(0.381006)	(0.028284)			1.206064		
	06/27/06	RA-228	R	**0.150881**	**U4**	1.75000E-02	0.081012	0.081012	1.00 SA	79%		3.141716		
				(0.631187)		(7.3186E-02)	(0.338868)	(0.338868)	(0.028284)			1.338003		
	06/27/06	RA-228	A	**0.687453**	**U4**	8.75000E-02	0.36911	0.36911	1.00 SA	79%		2.111998		
				(0.476153)		(5.8122E-02)	(0.25495)	(0.25495)	(0.02)			0.899463		
	06/27/06	RA-228	R	**4.859725**	**U4**	9.75000E-02	2.609307	2.609307	1.00 SA	79%		19.494951		
				(4.446113)		(8.8635E-02)	(2.382518)	(2.382518)	(0.028284)			8.40171		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	TF	FILTER	*STLE	Ra228WoBS	**H57101AD**	**PCI/SA**		05/10/06 10:45	06/27/06 06:51	06/19/06 10:45	RATA22603	1	1.00 SA	
536403,P-0623					,J6E250379-11 v4.8.24		FILTER			30.6	06/26/06 10:45	RATA22603 Alq	94%	0.248628 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	130	81	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	84%	N		1.2964E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.022073		
1	06/26/06 14:21	RA-228	59	81	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	84%	N		1.4382E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.022073		
2	06/26/06 15:17	RA-228	58	81	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	84%	N		1.5955E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.022073		
3	06/27/06 06:51	RA-228	44	73	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	84%	N		9.2237E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.022073		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:11

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 12:19:20 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**14.538859**		2.39750E+00	7.919729	7.919729	1.00 SA	84%		2.123214		
				(2.037287)		(2.2914E-01)	(1.012226)	(1.012226)	(0.028284)			0.897801		
	06/27/06	RA-228	R	**6.5762**		9.77500E-01	3.582242	3.582242	1.00 SA	84%		2.355485		
				(1.243052)		(1.5526E-01)	(0.645099)	(0.645099)	(0.028284)			0.996017		
	06/27/06	RA-228	R	**7.146338**		9.57500E-01	3.892813	3.892813	1.00 SA	84%		2.613165		
				(1.362653)		(1.5397E-01)	(0.707789)	(0.707789)	(0.028284)			1.104977		
	06/27/06	RA-228	A	**6.861269**		9.67500E-01	3.737528	3.737528	1.00 SA	84%		1.756683		
				(0.922226)		(1.0933E-01)	(0.478831)	(0.478831)	(0.02)			0.742813		
	06/27/06	RA-228	R	**30.094451**		6.97500E-01	16.393301	16.393301	1.00 SA	84%		14.45961		
				(6.566869)		(1.3437E-01)	(3.450975)	(3.450975)	(0.028284)			6.064145		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	TF	FILTER	*STLE	Ra228WoBS	**H57111AD**	**PCI/SA**		05/10/06 11:20	06/27/06 06:51	06/19/06 10:45	RATA22604	1	1.00 SA	
536403,P-0624					,J6E250379-12 v4.8.24		FILTER			31.2	06/26/06 10:45	RATA22604 Alq	80%	0.24997 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	88	103	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	73%	N		1.2964E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.181E-02)	(0.000E+00)		6%			(0.000E+00)	4.000481		
1	06/26/06 14:21	RA-228	33	103	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	73%	N		1.4382E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		6%			(0.000E+00)	4.000481		
2	06/26/06 15:17	RA-228	30	103	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	73%	N		1.5955E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		6%			(0.000E+00)	4.000481		
3	06/27/06 06:51	RA-228	30	101	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	73%	N		9.2237E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.181E-02)	(0.000E+00)		6%			(0.000E+00)	4.000481		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**10.18972**		1.50250E+00	5.580633	5.580633	1.00 SA	73%		2.630679		
				(1.648854)		(1.8932E-01)	(0.844212)	(0.844212)	(0.028284)			1.132224		
	06/27/06	RA-228	R	**3.028309**		4.02500E-01	1.658523	1.658523	1.00 SA	73%		2.918464		
				(0.937107)		(1.1766E-01)	(0.504307)	(0.504307)	(0.028284)			1.256084		
	06/27/06	RA-228	R	**2.858784**		3.42500E-01	1.565679	1.565679	1.00 SA	73%		3.237732		
				(0.982402)		(1.1244E-01)	(0.530464)	(0.530464)	(0.028284)			1.393495		
	06/27/06	RA-228	A	**2.943547**		3.72500E-01	1.612101	1.612101	1.00 SA	73%		2.176544		
				(0.678838)		(8.1375E-02)	(0.365964)	(0.365964)	(0.02)			0.936768		
	06/27/06	RA-228	R	**16.767685**		3.47500E-01	9.183206	9.183206	1.00 SA	73%		18.559998		
				(5.68392)		(1.1239E-01)	(3.067903)	(3.067903)	(0.028284)			7.977097		

RecCnt:13

RADCALC v4.8.24
STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 12:19:20 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	TF	FILTER	*STLE	Ra228WoBS	**H57121AD**	**PCI/SA**		05/10/06 12:00	06/27/06 06:51	06/19/06 10:45	RATA22605	1	1.00 SA	
536403,P-0625					,J6E250379-13 v4.8.24		FILTER			29.7	06/26/06 10:45	RATA22605 Alq	78%	0.25105 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	102	105	GPC3C	1	N	N	4.7197E-01	1.0000E+00	N	67%	N		1.2964E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.103E-02)	(0.000E+00)		5%			(0.000E+00)	3.983274		
1	06/26/06 14:21	RA-228	47	105	GPC3C	1	N	N	4.7197E-01	1.0000E+00	N	67%	N		1.4382E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		5%			(0.000E+00)	3.983274		
2	06/26/06 15:17	RA-228	43	105	GPC3C	1	N	N	4.7197E-01	1.0000E+00	N	67%	N		1.5955E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		5%			(0.000E+00)	3.983274		
3	06/27/06 06:51	RA-228	20	122	GPC3C	1	N	N	4.7197E-01	1.0000E+00	N	67%	N		9.2237E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.103E-02)	(0.000E+00)		5%			(0.000E+00)	3.983274		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**13.255586**		1.77750E+00	7.291152	7.291152	1.00 SA	67%		2.916785		
				(2.026276)		(2.0361E-01)	(1.032845)	(1.032845)	(0.028284)			1.257042		
	06/27/06	RA-228	R	**5.605123**		6.77500E-01	3.083063	3.083063	1.00 SA	67%		3.235869		
				(1.285926)		(1.3949E-01)	(0.684783)	(0.684783)	(0.028284)			1.394557		
	06/27/06	RA-228	R	**5.484036**		5.97500E-01	3.01646	3.01646	1.00 SA	67%		3.589859		
				(1.346242)		(1.3363E-01)	(0.719932)	(0.719932)	(0.028284)			1.547116		
	06/27/06	RA-228	A	**5.544579**		6.37500E-01	3.049761	3.049761	1.00 SA	67%		2.413259		
				(0.930856)		(9.6582E-02)	(0.496797)	(0.496797)	(0.02)			1.040039		
	06/27/06	RA-228	R	**5.040614**	**U4**	9.50000E-02	2.772558	2.772558	1.00 SA	67%		22.145625		
				(4.992905)		(9.3608E-02)	(2.741694)	(2.741694)	(0.028284)			9.640635		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	TF	FILTER	*STLE	Ra228WoBS	**H57131AD**	**PCI/SA**		05/10/06 12:15	06/27/06 06:51	06/19/06 10:45	RATA22606	1	1.00 SA	
536403,P-0626					,J6E250379-14 v4.8.24		FILTER			30.9	06/26/06 10:45	RATA22606 Alq	96%–	0.249877 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	88	91	GPC3D	1	N	N	4.6782E-01	1.0000E+00	N	86%	N		1.2964E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	4.001974		
1	06/26/06 14:21	RA-228	46	91	GPC3D	1	N	N	4.6782E-01	1.0000E+00	N	86%	N		1.4382E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	4.001974		
2	06/26/06 15:17	RA-228	38	91	GPC3D	1	N	N	4.6782E-01	1.0000E+00	N	86%	N		1.5955E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	4.001974		
3	06/27/06 06:51	RA-228	25	106	GPC3D	1	N	N	4.6782E-01	1.0000E+00	N	86%	N		9.2237E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	4.001974		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:14

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 12:19:20 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**8.995315**		1.53250E+00	4.924714	4.924714	1.00 SA	86%		2.159226		
				(1.43725)		(1.8913E-01)	(0.734243)	(0.734243)	(0.028284)			0.921091		
	06/27/06	RA-228	R	**4.509435**		6.92500E-01	2.468805	2.468805	1.00 SA	86%		2.395436		
				(1.006863)		(1.3773E-01)	(0.532676)	(0.532676)	(0.028284)			1.021854		
	06/27/06	RA-228	R	**3.846879**		5.32500E-01	2.106072	2.106072	1.00 SA	86%		2.657486		
				(0.987603)		(1.2557E-01)	(0.526979)	(0.526979)	(0.028284)			1.133641		
	06/27/06	RA-228	A	**4.178157**		6.12500E-01	2.287439	2.287439	1.00 SA	86%		1.786478		
				(0.705183)		(9.3190E-02)	(0.37465)	(0.37465)	(0.02)			0.762083		
	06/27/06	RA-228	R	**9.814185**		2.35000E-01	5.373026	5.373026	1.00 SA	86%		16.401178		
				(4.425888)		(1.0326E-01)	(2.403326)	(2.403326)	(0.028284)			7.073025		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	TF	FILTER	*STLE	Ra228WoBS	**H57141AD**	**PCI/SA**		05/10/06 10:15	06/27/06 06:51	06/19/06 10:45	RATA22607	1	1.00 SA	
536403,P-0627					,J6E250379-15 v4.8.24		FILTER			31.6	06/26/06 10:45	RATA22607 Alq	90%	0.250121 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	179	144	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	83%	N		1.2968E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	3.998066		
1	06/26/06 14:22	RA-228	83	144	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	83%	N		1.4387E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	3.998066		
2	06/26/06 15:17	RA-228	55	144	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	83%	N		1.5960E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	3.998066		
3	06/27/06 06:51	RA-228	35	177	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	83%	N		9.2263E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	3.998066		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**19.148404**		3.22000E+00	10.493239	10.493239	1.00 SA	83%		2.668678		
				(2.512516)		(2.6926E-01)	(1.237883)	(1.237883)	(0.028284)			1.17388		
	06/27/06	RA-228	R	**8.576431**		1.30000E+00	4.699845	4.699845	1.00 SA	83%		2.960621		
				(1.495399)		(1.8466E-01)	(0.77372)	(0.77372)	(0.028284)			1.302298		
	06/27/06	RA-228	R	**5.415865**		7.40000E-01	2.96787	2.96787	1.00 SA	83%		3.284397		
				(1.235521)		(1.5133E-01)	(0.655243)	(0.655243)	(0.028284)			1.444719		
	06/27/06	RA-228	A	**6.996148**		1.02000E+00	3.833858	3.833858	1.00 SA	83%		2.207947		
				(0.969888)		(1.1937E-01)	(0.506948)	(0.506948)	(0.02)			0.971217		
	06/27/06	RA-228	R	**10.894589**		2.57500E-01	5.970186	5.970186	1.00 SA	83%		20.801097		
				(5.315508)		(1.2291E-01)	(2.892614)	(2.892614)	(0.028284)			9.25947		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 12:19:20 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	TF	FILTER	*STLE	Ra228WoBS	**H6A3J1AA**	**PCI/SA**	**B**	05/10/06 10:20	06/27/06 06:51	06/19/06 10:45		1	1.00 SA	
0,INTRA-LAB BLANK					,J6E260000-452		FILTER			30.8	06/26/06 10:45		86%	1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	49	105	GPC4B	1	N	N	4.6215E-01	1.0000E+00	N	77%	N		1.2968E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
1	06/26/06 14:22	RA-228	27	105	GPC4B	1	N	N	4.6215E-01	1.0000E+00	N	77%	N		1.4387E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
2	06/26/06 15:17	RA-228	20	105	GPC4B	1	N	N	4.6215E-01	1.0000E+00	N	77%	N		1.5960E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
3	06/27/06 06:51	RA-228	19	122	GPC4B	1	N	N	4.6215E-01	1.0000E+00	N	77%	N		9.2263E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**1.186936**		7.17500E-01	2.600488	2.600488	1.00 SA	77%		0.647024		
				(0.262904)		(1.4232E-01)	(0.559324)	(0.559324)	(0.017321)			0.278847		
	06/27/06	RA-228	R	**0.509278**		2.77500E-01	1.11579	1.11579	1.00 SA	77%		0.717806		
				(0.202744)		(1.0703E-01)	(0.440256)	(0.440256)	(0.017321)			0.309352		
	06/27/06	RA-228	R	**0.279942**	**U4**	1.37500E-01	0.613331	0.613331	1.00 SA	77%		0.796306		
				(0.191421)		(9.3039E-02)	(0.418131)	(0.418131)	(0.017321)			0.343183		
	06/27/06	RA-228	A	**0.39461**		2.07500E-01	0.864561	0.864561	1.00 SA	77%		0.535319		
				(0.139416)		(7.0909E-02)	(0.303586)	(0.303586)	(0.012247)			0.230706		
	06/27/06	RA-228	R	**0.882721**	**U4**	7.50000E-02	1.933976	1.933976	1.00 SA	77%		4.912364		
				(1.079803)		(9.1447E-02)	(2.363554)	(2.363554)	(0.017321)			2.138495		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
17	Calc	TF	FILTER	*STLE	Ra228WoBS	**H6A3J1AC**	**PCI/SA**	**S**	05/10/06 10:20	06/27/06 06:51	06/19/06 10:45	RASC4119	1	1.00 SA	
0,INTRA-LAB CHECK					,J6E260000-452		FILTER			31.1	06/26/06 10:45		93%	1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	219	100	GPC4C	1	N	N	4.6870E-01	1.0000E+00	N	84%	N		1.2968E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.147E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
1	06/26/06 14:22	RA-228	171	100	GPC4C	1	N	N	4.6870E-01	1.0000E+00	N	84%	N		1.4387E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.147E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
2	06/26/06 15:17	RA-228	134	100	GPC4C	1	N	N	4.6870E-01	1.0000E+00	N	84%	N		1.5960E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.147E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
3	06/27/06 06:51	RA-228	35	111	GPC4C	1	N	N	4.6870E-01	1.0000E+00	N	84%	N		9.2263E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.147E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 12:19:21 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**6.227934**		4.13000E+00	13.644935	13.644935	1.00 SA	84%	122%	0.577561		
				(0.762042)		(2.9703E-01)	(1.505381)	(1.505381)	(0.017321)			0.248062		
	06/27/06	RA-228	R	**5.303221**		3.17000E+00	11.618959	11.618959	1.00 SA	84%	104%	0.640744		
				(0.684674)		(2.6273E-01)	(1.368286)	(1.368286)	(0.017321)			0.275199		
	06/27/06	RA-228	R	**4.509825**		2.43000E+00	9.880687	9.880687	1.00 SA	84%	88%	0.710816		
				(0.621347)		(2.3286E-01)	(1.25692)	(1.25692)	(0.017321)			0.305295		
	06/27/06	RA-228	A	**4.906523**		2.80000E+00	10.749823	10.749823	1.00 SA	84%	96%	0.477849		
				(0.462291)		(1.7553E-01)	(0.928985)	(0.928985)	(0.012247)			0.205235		
	06/27/06	RA-228	R	**4.532915**		4.22500E-01	9.931276	9.931276	1.00 SA	84%	89%	4.298139		
				(1.375755)		(1.2122E-01)	(2.968012)	(2.968012)	(0.017321)			1.859423		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17

RADCALC v4.8.24

STL Richland

UST Number: H57091AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-A File: [quad7.sample.A]H57091AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.A_1;2929

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00074	0050	01138	1700	26-JUN-2006 13:25:53.60
2	00000	00048	0050	01140	1700	26-JUN-2006 14:21:09.23
3	00000	00040	0050	01153	1700	26-JUN-2006 15:16:24.83

Bkg File: [quad7.bkgrnd]2006-06-26_0054.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00300	0400	0.75	09122	1700	26-JUN-2006 00:54:21.29

UST Number: H57091AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-A File: [quad7.sample.A]H57091AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.A_1;2930

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00053	0050	01141	1700	27-JUN-2006 06:50:22.35

Bkg File: [quad7.bkgrnd]2006-06-27_0104.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00305	0400	0.76	09190	1700	27-JUN-2006 01:04:35.07

UST Number: H571F1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-B File: [quad7.sample.B]H571F1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.B_1;2916

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00093	0050	01138	1700	26-JUN-2006 13:25:53.60
2	00000	00055	0050	01140	1700	26-JUN-2006 14:21:09.23
3	00000	00044	0050	01153	1700	26-JUN-2006 15:16:24.83

Bkg File: [quad7.bkgrnd]2006-06-26_0054.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00271	0400	0.68	09122	1700	26-JUN-2006 00:54:21.29

UST Number: H571F1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-B File: [quad7.sample.B]H571F1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.B_1;2917

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00034	0050	01141	1700	27-JUN-2006 06:50:22.35

Bkg File: [quad7.bkgrnd]2006-06-27_0104.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00316	0400	0.79	09190	1700	27-JUN-2006 01:04:35.07

UST Number: H571G1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-C File: [quad7.sample.C]H571G1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.C_1;2921

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00067	0050	01138	1700	26-JUN-2006 13:25:53.60
2	00000	00054	0050	01140	1700	26-JUN-2006 14:21:09.23
3	00000	00041	0050	01153	1700	26-JUN-2006 15:16:24.83

Bkg File: [quad7.bkgrnd]2006-06-26_0054.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00326	0400	0.82	09122	1700	26-JUN-2006 00:54:21.29

UST Number: H571G1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-C File: [quad7.sample.C]H571G1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.C_1;2922

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00043	0050	01141	1700	27-JUN-2006 06:50:22.35

Bkg File: [quad7.bkgrnd]2006-06-27_0104.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00311	0400	0.78	09190	1700	27-JUN-2006 01:04:35.07

UST Number: H571M1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-A File: [quad1.sample.A]H571M1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.A_1;2978

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00057	0050	01143	1650	26-JUN-2006 13:26:04.47
2	00000	00051	0050	01151	1650	26-JUN-2006 14:21:20.15
3	00000	00022	0050	01156	1650	26-JUN-2006 15:16:35.75

Bkg File: [quad1.bkgrnd]2006-06-26_0053.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00240	0400	0.60	09180	1650	26-JUN-2006 00:53:32.01

UST Number: H571M1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-A File: [quad1.sample.A]H571M1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.A_1;2979

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00025	0050	01160	1650	27-JUN-2006 06:50:33.72

Bkg File: [quad1.bkgrnd]2006-06-27_0103.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00236	0400	0.59	09248	1650	27-JUN-2006 01:03:25.42

UST Number: H571N1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-C File: [quad1.sample.C]H571N1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.C_1;2974

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00069	0050	01143	1650	26-JUN-2006 13:26:04.47
2	00000	00055	0050	01151	1650	26-JUN-2006 14:21:20.15
3	00000	00036	0050	01156	1650	26-JUN-2006 15:16:35.75

Bkg File: [quad1.bkgrnd]2006-06-26_0053.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00203	0400	0.51	09180	1650	26-JUN-2006 00:53:32.01

UST Number: H571N1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-C File: [quad1.sample.C]H571N1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.C_1;2975

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00053	0050	01160	1650	27-JUN-2006 06:50:33.72

Bkg File: [quad1.bkgrnd]2006-06-27_0103.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00217	0400	0.54	09248	1650	27-JUN-2006 01:03:25.42

UST Number: H571Q1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-D File: [quad1.sample.D]H571Q1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.D_1;2977

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00082	0050	01143	1650	26-JUN-2006 13:26:04.47
2	00000	00046	0050	01151	1650	26-JUN-2006 14:21:20.15
3	00000	00048	0050	01156	1650	26-JUN-2006 15:16:35.75

Bkg File: [quad1.bkgrnd]2006-06-26_0053.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00258	0400	0.65	09180	1650	26-JUN-2006 00:53:32.01

UST Number: H571Q1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-D File: [quad1.sample.D]H571Q1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.D_1;2978

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00043	0050	01160	1650	27-JUN-2006 06:50:33.72

Bkg File: [quad1.bkgrnd]2006-06-27_0103.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00251	0400	0.63	09248	1650	27-JUN-2006 01:03:25.42

UST Number: H571R1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-A File: [quad2.sample.A]H571R1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.A_1;3519

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00037	0050	01169	1810	26-JUN-2006 13:26:27.32
2	00000	00022	0050	01160	1810	26-JUN-2006 14:21:42.95
3	00000	00014	0050	01176	1810	26-JUN-2006 15:16:58.50

Bkg File: [quad2.bkgrnd]2006-06-26_0053.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00097	0400	0.24	09262	1810	26-JUN-2006 00:53:37.55

UST Number: H571R1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-A File: [quad2.sample.A]H571R1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.A_1;3520

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00021	0050	01153	1810	27-JUN-2006 06:51:02.55

Bkg File: [quad2.bkgrnd]2006-06-27_0103.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00088	0400	0.22	09349	1810	27-JUN-2006 01:03:27.41

UST Number: H571T1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-B File: [quad2.sample.B]H571T1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.B_1;3516

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00031	0050	01169	1810	26-JUN-2006 13:26:27.32
2	00000	00035	0050	01160	1810	26-JUN-2006 14:21:42.95
3	00000	00020	0050	01176	1810	26-JUN-2006 15:16:58.50

Bkg File: [quad2.bkgrnd]2006-06-26_0053.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00086	0400	0.22	09262	1810	26-JUN-2006 00:53:37.55

UST Number: H571T1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-B File: [quad2.sample.B]H571T1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.B_1;3517

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00014	0050	01153	1810	27-JUN-2006 06:51:02.55

Bkg File: [quad2.bkgrnd]2006-06-27_0103.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00112	0400	0.28	09349	1810	27-JUN-2006 01:03:27.41

UST Number: H571V1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-C File: [quad2.sample.C]H571V1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.C_1;3517

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00038	0050	01169	1810	26-JUN-2006 13:26:27.32
2	00000	00030	0050	01160	1810	26-JUN-2006 14:21:42.95
3	00000	00021	0050	01176	1810	26-JUN-2006 15:16:58.50

Bkg File: [quad2.bkgrnd]2006-06-26_0053.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00087	0400	0.22	09262	1810	26-JUN-2006 00:53:37.55

UST Number: H571V1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-C File: [quad2.sample.C]H571V1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.C_1;3518

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00011	0050	01153	1810	27-JUN-2006 06:51:02.55

Bkg File: [quad2.bkgrnd]2006-06-27_0103.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00095	0400	0.24	09349	1810	27-JUN-2006 01:03:27.41

UST Number: H571X1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-D File: [quad2.sample.D]H571X1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.D_1;3516

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00033	0050	01169	1810	26-JUN-2006 13:26:27.32
2	00000	00019	0050	01160	1810	26-JUN-2006 14:21:42.95
3	00000	00012	0050	01176	1810	26-JUN-2006 15:16:58.50

Bkg File: [quad2.bkgrnd]2006-06-26_0053.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00089	0400	0.22	09262	1810	26-JUN-2006 00:53:37.55

UST Number: H571X1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-D File: [quad2.sample.D]H571X1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.D_1;3517

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00018	0050	01153	1810	27-JUN-2006 06:51:02.55

Bkg File: [quad2.bkgrnd]2006-06-27_0103.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00105	0400	0.26	09349	1810	27-JUN-2006 01:03:27.41

UST Number: H57101AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-A File: [quad3.sample.A]H57101AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.A_1;5433

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00130	0050	01240	1920	26-JUN-2006 13:26:39.76
2	00000	00059	0050	01259	1920	26-JUN-2006 14:21:55.54
3	00000	00058	0050	01268	1920	26-JUN-2006 15:17:11.14

Bkg File: [quad3.bkgrnd]2006-06-26_0053.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00081	0400	0.20	10005	1920	26-JUN-2006 00:53:44.09

UST Number: H57101AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-A File: [quad3.sample.A]H57101AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.A_1;5434

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00044	0050	01266	1920	27-JUN-2006 06:51:14.18

Bkg File: [quad3.bkgrnd]2006-06-27_0103.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00073	0400	0.18	10204	1920	27-JUN-2006 01:03:30.02

UST Number: H57111AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-B File: [quad3.sample.B]H57111AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.B_1;5442

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00088	0050	01240	1920	26-JUN-2006 13:26:39.76
2	00000	00033	0050	01259	1920	26-JUN-2006 14:21:55.54
3	00000	00030	0050	01268	1920	26-JUN-2006 15:17:11.14

Bkg File: [quad3.bkgrnd]2006-06-26_0053.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00103	0400	0.26	10005	1920	26-JUN-2006 00:53:44.09

UST Number: H57111AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-B File: [quad3.sample.B]H57111AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.B_1;5443

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00030	0050	01266	1920	27-JUN-2006 06:51:14.18

Bkg File: [quad3.bkgrnd]2006-06-27_0103.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00101	0400	0.25	10204	1920	27-JUN-2006 01:03:30.02

UST Number: H57121AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-C File: [quad3.sample.C]H57121AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.C_1;5447

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00102	0050	01240	1920	26-JUN-2006 13:26:39.76
2	00000	00047	0050	01259	1920	26-JUN-2006 14:21:55.54
3	00000	00043	0050	01268	1920	26-JUN-2006 15:17:11.14

Bkg File: [quad3.bkgrnd]2006-06-26_0053.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00105	0400	0.26	10005	1920	26-JUN-2006 00:53:44.09

UST Number: H57121AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-C File: [quad3.sample.C]H57121AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.C_1;5448

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00020	0050	01266	1920	27-JUN-2006 06:51:14.18

Bkg File: [quad3.bkgrnd]2006-06-27_0103.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00122	0400	0.31	10204	1920	27-JUN-2006 01:03:30.02

UST Number: H57131AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-D File: [quad3.sample.D]H57131AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.D_1;5427

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00088	0050	01240	1920	26-JUN-2006 13:26:39.76
2	00000	00046	0050	01259	1920	26-JUN-2006 14:21:55.54
3	00000	00038	0050	01268	1920	26-JUN-2006 15:17:11.14

Bkg File: [quad3.bkgrnd]2006-06-26_0053.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00091	0400	0.23	10005	1920	26-JUN-2006 00:53:44.09

UST Number: H57131AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-D File: [quad3.sample.D]H57131AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.D_1;5428

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00025	0050	01266	1920	27-JUN-2006 06:51:14.18

Bkg File: [quad3.bkgrnd]2006-06-27_0103.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00106	0400	0.27	10204	1920	27-JUN-2006 01:03:30.02

UST Number: H57141AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 4-A File: [quad4.sample.A]H57141AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.A_1;5451

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00179	0050	01197	1850	26-JUN-2006 13:26:49.56
2	00000	00083	0050	01193	1850	26-JUN-2006 14:22:05.24
3	00000	00055	0050	01197	1850	26-JUN-2006 15:17:20.78

Bkg File: [quad4.bkgrnd]2006-06-26_0053.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00144	0400	0.36	09577	1850	26-JUN-2006 00:53:50.69

UST Number: H57141AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 4-A File: [quad4.sample.A]H57141AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.A_1;5452

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00035	0050	01203	1850	27-JUN-2006 06:51:23.93

Bkg File: [quad4.bkgrnd]2006-06-27_0104.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00177	0400	0.44	09657	1850	27-JUN-2006 01:04:24.82

UST Number: H6A3J1AA Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 4-B File: [quad4.sample.B]H6A3J1AA.180
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.B_1;5450

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00049	0050	01197	1850	26-JUN-2006 13:26:49.56
2	00000	00027	0050	01193	1850	26-JUN-2006 14:22:05.24
3	00000	00020	0050	01197	1850	26-JUN-2006 15:17:20.78

Bkg File: [quad4.bkgrnd]2006-06-26_0053.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00105	0400	0.26	09577	1850	26-JUN-2006 00:53:50.69

UST Number: H6A3J1AA Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 4-B File: [quad4.sample.B]H6A3J1AA.430
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.B_1;5451

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00019	0050	01203	1850	27-JUN-2006 06:51:23.93

Bkg File: [quad4.bkgrnd]2006-06-27_0104.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00122	0400	0.31	09657	1850	27-JUN-2006 01:04:24.82

UST Number: H6A3J1AC Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 4-C File: [quad4.sample.C]H6A3J1AC.180
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.C_1;5453

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00219	0050	01197	1850	26-JUN-2006 13:26:49.56
2	00000	00171	0050	01193	1850	26-JUN-2006 14:22:05.24
3	00000	00134	0050	01197	1850	26-JUN-2006 15:17:20.78

Bkg File: [quad4.bkgrnd]2006-06-26_0053.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00100	0400	0.25	09577	1850	26-JUN-2006 00:53:50.69

UST Number: H6A3J1AC Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 4-C File: [quad4.sample.C]H6A3J1AC.430
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.C_1;5454

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00035	0050	01203	1850	27-JUN-2006 06:51:23.93

Bkg File: [quad4.bkgrnd]2006-06-27_0104.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00111	0400	0.28	09657	1850	27-JUN-2006 01:04:24.82

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Results

6/27/2006 8:45:04 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Ra-228 by GPC				Ra-226/Ra-228 Deem With Out Blk Subt.										
Calc	TF	FILTER	H57091AD	RA-228	3.99E+00	(1.05E+00)		PCI/SA	R	1.56E+00	3.41E+00		84%	
Calc	TF	FILTER	H57091AD	RA-228	1.27E+00	(8.89E-01)	U4	PCI/SA	R	1.73E+00	3.78E+00		84%	
Calc	TF	FILTER	H57091AD	RA-228	3.36E-01	(8.99E-01)	U4	PCI/SA	R	1.91E+00	4.19E+00		84%	
Calc	TF	FILTER	H57091AD	RA-228	1.86E+00	(5.48E-01)		PCI/SA	A	1.00E+00	2.19E+00		84%	
Calc	TF	FILTER	H57091AD	RA-228	1.16E+01	(6.02E+00)		PCI/SA	R	1.12E+01	2.44E+01		84%	
Calc	TF	FILTER	H571F1AD	RA-228	7.12E+00	(1.39E+00)		PCI/SA	R	1.63E+00	3.59E+00		76%	
Calc	TF	FILTER	H571F1AD	RA-228	2.82E+00	(1.07E+00)		PCI/SA	R	1.81E+00	3.98E+00		76%	
Calc	TF	FILTER	H571F1AD	RA-228	1.50E+00	(1.04E+00)	U4	PCI/SA	R	2.01E+00	4.41E+00		76%	
Calc	TF	FILTER	H571F1AD	RA-228	3.82E+00	(6.80E-01)		PCI/SA	A	1.05E+00	2.31E+00		76%	
Calc	TF	FILTER	H571F1AD	RA-228	-4.71E+00	(5.37E+00)	U4	PCI/SA	R	1.25E+01	2.74E+01		76%	
Calc	TF	FILTER	H571G1AD	RA-228	3.33E+00	(1.13E+00)		PCI/SA	R	1.88E+00	4.10E+00		73%	
Calc	TF	FILTER	H571G1AD	RA-228	1.86E+00	(1.10E+00)		PCI/SA	R	2.09E+00	4.55E+00		73%	
Calc	TF	FILTER	H571G1AD	RA-228	3.90E-02	(1.06E+00)	U4	PCI/SA	R	2.32E+00	5.05E+00		73%	
Calc	TF	FILTER	H571G1AD	RA-228	1.74E+00	(6.32E-01)		PCI/SA	A	1.21E+00	2.64E+00		73%	
Calc	TF	FILTER	H571G1AD	RA-228	3.72E+00	(6.25E+00)	U4	PCI/SA	R	1.31E+01	2.86E+01		73%	
Calc	TF	FILTER	H571M1AD	RA-228	2.86E+00	(8.77E-01)		PCI/SA	R	1.35E+00	2.99E+00		84%	
Calc	TF	FILTER	H571M1AD	RA-228	2.47E+00	(9.06E-01)		PCI/SA	R	1.50E+00	3.32E+00		84%	
Calc	TF	FILTER	H571M1AD	RA-228	-1.04E+00	(6.71E-01)	U4	PCI/SA	R	1.66E+00	3.68E+00		84%	
Calc	TF	FILTER	H571M1AD	RA-228	1.43E+00	(4.76E-01)		PCI/SA	A	8.69E-01	1.92E+00		84%	
Calc	TF	FILTER	H571M1AD	RA-228	-3.39E+00	(4.06E+00)	U4	PCI/SA	R	9.53E+00	2.11E+01		84%	
Calc	TF	FILTER	H571N1AD	RA-228	4.99E+00	(1.09E+00)		PCI/SA	R	1.34E+00	2.99E+00		79%	
Calc	TF	FILTER	H571N1AD	RA-228	3.76E+00	(1.04E+00)		PCI/SA	R	1.49E+00	3.31E+00		79%	
Calc	TF	FILTER	H571N1AD	RA-228	1.49E+00	(8.93E-01)		PCI/SA	R	1.65E+00	3.68E+00		79%	
Calc	TF	FILTER	H571N1AD	RA-228	3.41E+00	(5.84E-01)		PCI/SA	A	8.61E-01	1.92E+00		79%	
Calc	TF	FILTER	H571N1AD	RA-228	2.10E+01	(6.46E+00)		PCI/SA	R	9.85E+00	2.19E+01		79%	
Calc	TF	FILTER	H571Q1AD	RA-228	5.41E+00	(1.15E+00)		PCI/SA	R	1.44E+00	3.17E+00		82%	
Calc	TF	FILTER	H571Q1AD	RA-228	1.66E+00	(8.70E-01)		PCI/SA	R	1.59E+00	3.51E+00		82%	
Calc	TF	FILTER	H571Q1AD	RA-228	2.11E+00	(9.89E-01)		PCI/SA	R	1.77E+00	3.90E+00		82%	
Calc	TF	FILTER	H571Q1AD	RA-228	3.06E+00	(5.82E-01)		PCI/SA	A	9.23E-01	2.03E+00		82%	
Calc	TF	FILTER	H571Q1AD	RA-228	8.99E+00	(5.38E+00)		PCI/SA	R	1.01E+01	2.22E+01		82%	
Calc	TF	FILTER	H571R1AD	RA-228	3.13E+00	(8.44E-01)		PCI/SA	R	1.02E+00	2.38E+00		88%	
Calc	TF	FILTER	H571R1AD	RA-228	1.38E+00	(6.91E-01)		PCI/SA	R	1.13E+00	2.64E+00		88%	
Calc	TF	FILTER	H571R1AD	RA-228	2.90E-01	(6.11E-01)	U4	PCI/SA	R	1.25E+00	2.93E+00		88%	
Calc	TF	FILTER	H571R1AD	RA-228	1.60E+00	(4.17E-01)		PCI/SA	A	6.55E-01	1.53E+00		88%	
Calc	TF	FILTER	H571R1AD	RA-228	8.95E+00	(4.33E+00)		PCI/SA	R	6.91E+00	1.62E+01		88%	
Calc	TF	FILTER	H571T1AD	RA-228	2.48E+00	(7.41E-01)		PCI/SA	R	9.35E-01	2.20E+00		86%	
Calc	TF	FILTER	H571T1AD	RA-228	3.30E+00	(8.85E-01)		PCI/SA	R	1.04E+00	2.44E+00		86%	
Calc	TF	FILTER	H571T1AD	RA-228	1.40E+00	(7.11E-01)		PCI/SA	R	1.15E+00	2.71E+00		86%	

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:39
RADCALC v4.8.24
STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Results

6/27/2006 8:45:05 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	TF	FILTER	H571T1AD	RA-228	2.39E+00	(4.52E-01)		PCI/SA	A	6.01E-01	1.41E+00		86%	
Calc	TF	FILTER	H571T1AD	RA-228	0.00E+00	(3.46E+00)	U4	PCI/SA	R	7.59E+00	1.75E+01		86%	
Calc	TF	FILTER	H571V1AD	RA-228	3.38E+00	(8.53E-01)		PCI/SA	R	9.56E-01	2.25E+00		88%	
Calc	TF	FILTER	H571V1AD	RA-228	2.64E+00	(8.18E-01)		PCI/SA	R	1.06E+00	2.49E+00		88%	
Calc	TF	FILTER	H571V1AD	RA-228	1.55E+00	(7.42E-01)		PCI/SA	R	1.18E+00	2.77E+00		88%	
Calc	TF	FILTER	H571V1AD	RA-228	2.52E+00	(4.65E-01)		PCI/SA	A	6.14E-01	1.44E+00		88%	
Calc	TF	FILTER	H571V1AD	RA-228	-7.75E-01	(3.13E+00)	U4	PCI/SA	R	7.10E+00	1.66E+01		88%	
Calc	TF	FILTER	H571X1AD	RA-228	3.06E+00	(8.80E-01)		PCI/SA	R	1.09E+00	2.55E+00		79%	
Calc	TF	FILTER	H571X1AD	RA-228	1.22E+00	(7.13E-01)		PCI/SA	R	1.21E+00	2.83E+00		79%	
Calc	TF	FILTER	H571X1AD	RA-228	1.51E-01	(6.31E-01)	U4	PCI/SA	R	1.34E+00	3.14E+00		79%	
Calc	TF	FILTER	H571X1AD	RA-228	1.48E+00	(4.32E-01)		PCI/SA	A	6.99E-01	1.64E+00		79%	
Calc	TF	FILTER	H571X1AD	RA-228	4.86E+00	(4.45E+00)	U4	PCI/SA	R	8.40E+00	1.95E+01		79%	
Calc	TF	FILTER	H57101AD	RA-228	1.45E+01	(2.04E+00)		PCI/SA	R	8.98E-01	2.12E+00		84%	
Calc	TF	FILTER	H57101AD	RA-228	6.58E+00	(1.24E+00)		PCI/SA	R	9.96E-01	2.36E+00		84%	
Calc	TF	FILTER	H57101AD	RA-228	7.15E+00	(1.36E+00)		PCI/SA	R	1.10E+00	2.61E+00		84%	
Calc	TF	FILTER	H57101AD	RA-228	9.42E+00	(9.16E-01)		PCI/SA	A	5.77E-01	1.36E+00		84%	
Calc	TF	FILTER	H57101AD	RA-228	3.01E+01	(6.57E+00)		PCI/SA	R	6.06E+00	1.45E+01		84%	
Calc	TF	FILTER	H57111AD	RA-228	1.02E+01	(1.65E+00)		PCI/SA	R	1.13E+00	2.63E+00		73%	
Calc	TF	FILTER	H57111AD	RA-228	3.03E+00	(9.37E-01)		PCI/SA	R	1.26E+00	2.92E+00		73%	
Calc	TF	FILTER	H57111AD	RA-228	2.86E+00	(9.82E-01)		PCI/SA	R	1.39E+00	3.24E+00		73%	
Calc	TF	FILTER	H57111AD	RA-228	5.36E+00	(7.12E-01)		PCI/SA	A	7.28E-01	1.69E+00		73%	
Calc	TF	FILTER	H57111AD	RA-228	1.68E+01	(5.68E+00)		PCI/SA	R	7.98E+00	1.86E+01		73%	
Calc	TF	FILTER	H57121AD	RA-228	1.33E+01	(2.03E+00)		PCI/SA	R	1.26E+00	2.92E+00		67%	
Calc	TF	FILTER	H57121AD	RA-228	5.61E+00	(1.29E+00)		PCI/SA	R	1.39E+00	3.24E+00		67%	
Calc	TF	FILTER	H57121AD	RA-228	5.48E+00	(1.35E+00)		PCI/SA	R	1.55E+00	3.59E+00		67%	
Calc	TF	FILTER	H57121AD	RA-228	8.11E+00	(9.17E-01)		PCI/SA	A	8.08E-01	1.87E+00		67%	
Calc	TF	FILTER	H57121AD	RA-228	5.04E+00	(4.99E+00)	U4	PCI/SA	R	9.64E+00	2.21E+01		67%	
Calc	TF	FILTER	H57131AD	RA-228	9.00E+00	(1.44E+00)		PCI/SA	R	9.21E-01	2.16E+00		86%	
Calc	TF	FILTER	H57131AD	RA-228	4.51E+00	(1.01E+00)		PCI/SA	R	1.02E+00	2.40E+00		86%	
Calc	TF	FILTER	H57131AD	RA-228	3.85E+00	(9.88E-01)		PCI/SA	R	1.13E+00	2.66E+00		86%	
Calc	TF	FILTER	H57131AD	RA-228	5.78E+00	(6.71E-01)		PCI/SA	A	5.92E-01	1.39E+00		86%	
Calc	TF	FILTER	H57131AD	RA-228	9.81E+00	(4.43E+00)		PCI/SA	R	7.07E+00	1.64E+01		86%	
Calc	TF	FILTER	H57141AD	RA-228	1.91E+01	(2.51E+00)		PCI/SA	R	1.17E+00	2.67E+00		83%	
Calc	TF	FILTER	H57141AD	RA-228	8.58E+00	(1.50E+00)		PCI/SA	R	1.30E+00	2.96E+00		83%	
Calc	TF	FILTER	H57141AD	RA-228	5.42E+00	(1.24E+00)		PCI/SA	R	1.44E+00	3.28E+00		83%	
Calc	TF	FILTER	H57141AD	RA-228	1.10E+01	(1.06E+00)		PCI/SA	A	7.55E-01	1.72E+00		83%	
Calc	TF	FILTER	H57141AD	RA-228	1.09E+01	(5.32E+00)		PCI/SA	R	9.26E+00	2.08E+01		83%	
Calc	TF	FILTER	H6A3J1AA	RA-228	1.19E+00	(2.63E-01)		PCI/SA	R	2.79E-01	6.47E-01	B	77%	
Calc	TF	FILTER	H6A3J1AA	RA-228	5.09E-01	(2.03E-01)		PCI/SA	R	3.09E-01	7.18E-01	B	77%	

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Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:78
RADCALC v4.8.24
STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Results

6/27/2006 8:45:05 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	TF	FILTER	**H6A3J1AA**	RA-228	**2.80E-01**	**(1.91E-01)**	**U4**	PCI/SA	R	3.43E-01	7.96E-01	**B**	77%	
Calc	TF	FILTER	**H6A3J1AA**	RA-228	**6.59E-01**	**(1.28E-01)**		PCI/SA	A	1.79E-01	4.16E-01	**B**	77%	
Calc	TF	FILTER	**H6A3J1AA**	RA-228	**8.83E-01**	**(1.08E+00)**	**U4**	PCI/SA	R	2.14E+00	4.91E+00	**B**	77%	
Calc	TF	FILTER	**H6A3J1AC**	RA-228	**6.23E+00**	**(7.62E-01)**		PCI/SA	R	2.48E-01	5.78E-01	**S**	84%	122%
Calc	TF	FILTER	**H6A3J1AC**	RA-228	**5.30E+00**	**(6.85E-01)**		PCI/SA	R	2.75E-01	6.41E-01	**S**	84%	104%
Calc	TF	FILTER	**H6A3J1AC**	RA-228	**4.51E+00**	**(6.21E-01)**		PCI/SA	R	3.05E-01	7.11E-01	**S**	84%	88%
Calc	TF	FILTER	**H6A3J1AC**	RA-228	**5.35E+00**	**(3.99E-01)**		PCI/SA	A	1.59E-01	3.71E-01	**S**	84%	104%
Calc	TF	FILTER	**H6A3J1AC**	RA-228	**4.53E+00**	**(1.38E+00)**		PCI/SA	R	1.86E+00	4.30E+00	**S**	84%	89%

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
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Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:85
RADCALC v4.8.24
STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 8:45:05 AM

Detailed Report

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	TF	FILTER	*STLE	Ra228WoBS	**H57091AD**	**PCI/SA**		05/10/06 10:20	06/27/06 06:50	06/19/06 10:45	RATA22593	1	1.00 SA	
536403,000450					,J6E250379-1 v4.8.24		FILTER			31.8	06/26/06 10:45	RATA22593 Alq	90%	0.250361 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:25	RA-228	74	300	GPC7A	1	N	N	5.1750E-01	1.0000E+00	N	84%	N		1.2945E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.196E-02)	(0.000E+00)		7%			(0.000E+00)	3.994229		
1	06/26/06 14:21	RA-228	48	300	GPC7A	1	N	N	5.1750E-01	1.0000E+00	N	84%	N		1.4361E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.196E-02)	(0.000E+00)		7%			(0.000E+00)	3.994229		
2	06/26/06 15:16	RA-228	40	300	GPC7A	1	N	N	5.1750E-01	1.0000E+00	N	84%	N		1.5932E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.196E-02)	(0.000E+00)		7%			(0.000E+00)	3.994229		
3	06/27/06 06:50	RA-228	53	305	GPC7A	1	N	N	5.1750E-01	1.0000E+00	N	84%	N		9.2087E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.196E-02)	(0.000E+00)		7%			(0.000E+00)	3.994229		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**3.985516**		7.30000E-01	2.186146	2.186146	1.00 SA	84%		3.405194		
				(1.049165)		(1.7741E-01)	(0.561621)	(0.561621)	(0.028284)			1.555565		
	06/27/06	RA-228	R	**1.271943**	**U4**	2.10000E-01	0.697689	0.697689	1.00 SA	84%		3.777708		
				(0.888655)		(1.4517E-01)	(0.485797)	(0.485797)	(0.028284)			1.725738		
	06/27/06	RA-228	R	**0.335963**	**U4**	5.00000E-02	0.184283	0.184283	1.00 SA	84%		4.190842		
				(0.89899)		(1.3370E-01)	(0.493003)	(0.493003)	(0.028284)			1.914466		
	06/27/06	RA-228	A	**1.864474**		3.30000E-01	1.022706	1.022706	1.00 SA	84%		2.188878		
				(0.547584)		(8.8459E-02)	(0.29711)	(0.29711)	(0.01633)			0.999926		
	06/27/06	RA-228	R	**11.554139**		2.97500E-01	6.337706	6.337706	1.00 SA	84%		24.406717		
				(6.018178)		(1.5201E-01)	(3.280969)	(3.280969)	(0.028284)			11.157489		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571F1AD**	**PCI/SA**		05/10/06 10:35	06/27/06 06:50	06/19/06 10:45	RATA22594	1	1.00 SA	
536403,000451					,J6E250379-2 v4.8.24		FILTER			31.0	06/26/06 10:45	RATA22594 Alq	84%	0.24904 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:25	RA-228	93	271	GPC7B	1	N	N	5.1947E-01	1.0000E+00	N	76%	N		1.2945E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.257E-02)	(0.000E+00)		6%			(0.000E+00)	4.015427		
1	06/26/06 14:21	RA-228	55	271	GPC7B	1	N	N	5.1947E-01	1.0000E+00	N	76%	N		1.4361E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.257E-02)	(0.000E+00)		6%			(0.000E+00)	4.015427		
2	06/26/06 15:16	RA-228	44	271	GPC7B	1	N	N	5.1947E-01	1.0000E+00	N	76%	N		1.5932E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.257E-02)	(0.000E+00)		6%			(0.000E+00)	4.015427		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:2

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 8:45:05 AM

3	06/27/06 06:50	RA-228	34	316	GPC7B	1	N	N	5.1947E-01	1.0000E+00	N	76%	N		9.2087E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.257E-02)	(0.000E+00)		6%			(0.000E+00)	4.015427		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**7.121938**		1.18250E+00	3.885934	3.885934	1.00 SA	76%		3.58645		
				(1.390157)		(1.9721E-01)	(0.724917)	(0.724917)	(0.028284)			1.630976		
	06/27/06	RA-228	R	**2.822996**		4.22500E-01	1.540308	1.540308	1.00 SA	76%		3.978792		
				(1.067597)		(1.5393E-01)	(0.575752)	(0.575752)	(0.028284)			1.809398		
	06/27/06	RA-228	R	**1.501003**	U4	2.02500E-01	0.81899	0.81899	1.00 SA	76%		4.413917		
				(1.040784)		(1.3890E-01)	(0.565929)	(0.565929)	(0.028284)			2.007276		
	06/27/06	RA-228	A	**3.815312**		6.02500E-01	2.081744	2.081744	1.00 SA	76%		2.30539		
				(0.679504)		(9.5383E-02)	(0.361674)	(0.361674)	(0.01633)			1.048401		
	06/27/06	RA-228	R	**-4.712796**	U4	-1.10000E-01	-2.571437	-2.571437	1.00 SA	76%		27.364032		
				(5.368195)		(1.2480E-01)	(2.925314)	(2.925314)	(0.028284)			12.528393		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571G1AD**	**PCI/SA**		05/10/06 10:50	06/27/06 06:50	06/19/06 10:45	RATA22595	1	1.00 SA	
536403,000452					,J6E250379-3 v4.8.24		FILTER			30.9	06/26/06 10:45	RATA22595 Alq	82%	0.250905 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:25	RA-228	67	326	GPC7C	1	N	N	5.0675E-01	1.0000E+00	N	73%	N		1.2945E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.091E-02)	(0.000E+00)		6%			(0.000E+00)	3.985578		
1	06/26/06 14:21	RA-228	54	326	GPC7C	1	N	N	5.0675E-01	1.0000E+00	N	73%	N		1.4361E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.091E-02)	(0.000E+00)		6%			(0.000E+00)	3.985578		
2	06/26/06 15:16	RA-228	41	326	GPC7C	1	N	N	5.0675E-01	1.0000E+00	N	73%	N		1.5932E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.091E-02)	(0.000E+00)		6%			(0.000E+00)	3.985578		
3	06/27/06 06:50	RA-228	43	311	GPC7C	1	N	N	5.0675E-01	1.0000E+00	N	73%	N		9.2087E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.091E-02)	(0.000E+00)		6%			(0.000E+00)	3.985578		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**3.325223**		5.25000E-01	1.827932	1.827932	1.00 SA	73%		4.103467		
				(1.126603)		(1.6982E-01)	(0.610346)	(0.610346)	(0.028284)			1.881205		
	06/27/06	RA-228	R	**1.862061**		2.65000E-01	1.023607	1.023607	1.00 SA	73%		4.552369		
				(1.096499)		(1.5374E-01)	(0.599889)	(0.599889)	(0.028284)			2.087001		
	06/27/06	RA-228	R	**0.038975**	U4	5.00000E-03	0.021425	0.021425	1.00 SA	73%		5.050221		
				(1.058461)		(1.3578E-01)	(0.581853)	(0.581853)	(0.028284)			2.315238		
	06/27/06	RA-228	A	**1.742087**		2.65000E-01	0.957655	0.957655	1.00 SA	73%		2.637732		
				(0.631742)		(8.8765E-02)	(0.344954)	(0.344954)	(0.01633)			1.20925		
	06/27/06	RA-228	R	**3.717101**	U4	8.25000E-02	2.043354	2.043354	1.00 SA	73%		28.567763		
				(6.245212)		(1.3836E-01)	(3.431091)	(3.431091)	(0.028284)			13.070631		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 8:45:06 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571M1AD**	**PCI/SA**		05/10/06 11:25	06/27/06 06:50	06/19/06 10:45	RATA22596	1	1.00 SA	
536403,000453					,J6E250379-4 v4.8.24		FILTER			31.4	06/26/06 10:45	RATA22596 Alq	92%	0.251134 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	57	240	GPC1A	1	N	N	5.2887E-01	1.0000E+00	N	84%	N		1.2950E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.443E-02)	(0.000E+00)		7%			(0.000E+00)	3.981931		
1	06/26/06 14:21	RA-228	51	240	GPC1A	1	N	N	5.2887E-01	1.0000E+00	N	84%	N		1.4366E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.443E-02)	(0.000E+00)		7%			(0.000E+00)	3.981931		
2	06/26/06 15:16	RA-228	22	240	GPC1A	1	N	N	5.2887E-01	1.0000E+00	N	84%	N		1.5937E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.443E-02)	(0.000E+00)		7%			(0.000E+00)	3.981931		
3	06/27/06 06:50	RA-228	25	236	GPC1A	1	N	N	5.2887E-01	1.0000E+00	N	84%	N		9.2119E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.443E-02)	(0.000E+00)		7%			(0.000E+00)	3.981931		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**2.863411**		5.40000E-01	1.57552	1.57552	1.00 SA	84%		2.988457		
				(0.876868)		(1.5588E-01)	(0.47391)	(0.47391)	(0.028284)			1.35133		
	06/27/06	RA-228	R	**2.470732**		4.20000E-01	1.359458	1.359458	1.00 SA	84%		3.315381		
				(0.90644)		(1.4799E-01)	(0.492594)	(0.492594)	(0.028284)			1.49916		
	06/27/06	RA-228	R	**-1.044165**	**U4**	-1.60000E-01	-0.574526	-0.574526	1.00 SA	84%		3.677955		
				(0.670862)		(1.0149E-01)	(0.367646)	(0.367646)	(0.028284)			1.663109		
	06/27/06	RA-228	A	**1.429992**		2.66667E-01	0.786817	0.786817	1.00 SA	84%		1.920997		
				(0.476164)		(7.9232E-02)	(0.258715)	(0.258715)	(0.01633)			0.868643		
	06/27/06	RA-228	R	**-3.394856**	**U4**	-9.00000E-02	-1.867934	-1.867934	1.00 SA	84%		21.097869		
				(4.055554)		(1.0712E-01)	(2.228885)	(2.228885)	(0.028284)			9.532366		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571N1AD**	**PCI/SA**		05/10/06 12:05	06/27/06 06:50	06/19/06 10:45	RATA22597	1	1.00 SA	
536403,000454					,J6E250379-5 v4.8.24		FILTER			31.4	06/26/06 10:45	RATA22597 Alq	86%	0.252419 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	69	203	GPC1C	1	N	N	5.2100E-01	1.0000E+00	N	79%	N		1.2950E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.166E-02)	(0.000E+00)		6%			(0.000E+00)	3.961672		
1	06/26/06 14:21	RA-228	55	203	GPC1C	1	N	N	5.2100E-01	1.0000E+00	N	79%	N		1.4366E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.166E-02)	(0.000E+00)		6%			(0.000E+00)	3.961672		
2	06/26/06 15:16	RA-228	36	203	GPC1C	1	N	N	5.2100E-01	1.0000E+00	N	79%	N		1.5937E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.166E-02)	(0.000E+00)		6%			(0.000E+00)	3.961672		
3	06/27/06 06:50	RA-228	53	217	GPC1C	1	N	N	5.2100E-01	1.0000E+00	N	79%	N		9.2119E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.166E-02)	(0.000E+00)		6%			(0.000E+00)	3.961672		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:5

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 8:45:06 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**4.985357**		8.72500E-01	2.75712	2.75712	1.00 SA	79%		2.986497		
				(1.09364)		(1.6991E-01)	(0.583725)	(0.583725)	(0.028284)			1.339198		
	06/27/06	RA-228	R	**3.755828**		5.92500E-01	2.077137	2.077137	1.00 SA	79%		3.313208		
				(1.038695)		(1.5254E-01)	(0.561914)	(0.561914)	(0.028284)			1.4857		
	06/27/06	RA-228	R	**1.494339**		2.12500E-01	0.826435	0.826435	1.00 SA	79%		3.675544		
				(0.893098)		(1.2517E-01)	(0.491635)	(0.491635)	(0.028284)			1.648178		
	06/27/06	RA-228	A	**3.411841**		5.59167E-01	1.886897	1.886897	1.00 SA	79%		1.919738		
				(0.584291)		(8.6799E-02)	(0.315909)	(0.315909)	(0.01633)			0.860844		
	06/27/06	RA-228	R	**21.034398**		5.17500E-01	11.632941	11.632941	1.00 SA	79%		21.890387		
				(6.463651)		(1.5019E-01)	(3.511662)	(3.511662)	(0.028284)			9.84953		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571Q1AD**	**PCI/SA**		05/10/06 12:20	06/27/06 06:50	06/19/06 10:45	RATA22598	1	1.00 SA	
536403,000455					,J6E250379-6 v4.8.24		FILTER			30.9	06/26/06 10:45	RATA22598 Alq	91%	0.250257 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	82	258	GPC1D	1	N	N	5.3150E-01	1.0000E+00	N	82%	N		1.2950E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	3.995891		
1	06/26/06 14:21	RA-228	46	258	GPC1D	1	N	N	5.3150E-01	1.0000E+00	N	82%	N		1.4366E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	3.995891		
2	06/26/06 15:16	RA-228	48	258	GPC1D	1	N	N	5.3150E-01	1.0000E+00	N	82%	N		1.5937E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	3.995891		
3	06/27/06 06:50	RA-228	43	251	GPC1D	1	N	N	5.3150E-01	1.0000E+00	N	82%	N		9.2119E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	3.995891		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**5.4083**		9.95000E-01	2.965422	2.965422	1.00 SA	82%		3.165288		
				(1.148818)		(1.8551E-01)	(0.606436)	(0.606436)	(0.028284)			1.436195		
	06/27/06	RA-228	R	**1.658276**		2.75000E-01	0.909249	0.909249	1.00 SA	82%		3.511557		
				(0.869592)		(1.4147E-01)	(0.473936)	(0.473936)	(0.028284)			1.593309		
	06/27/06	RA-228	R	**2.107209**		3.15000E-01	1.155403	1.155403	1.00 SA	82%		3.895584		
				(0.988622)		(1.4427E-01)	(0.537992)	(0.537992)	(0.028284)			1.767555		
	06/27/06	RA-228	A	**3.057928**		5.28333E-01	1.676691	1.676691	1.00 SA	82%		2.034665		
				(0.582461)		(9.1432E-02)	(0.313017)	(0.313017)	(0.01633)			0.923194		
	06/27/06	RA-228	R	**8.98979**		2.32500E-01	4.929188	4.929188	1.00 SA	82%		22.23763		
				(5.375638)		(1.3700E-01)	(2.93388)	(2.93388)	(0.028284)			10.076956		

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RecCnt:7 RADCALC v4.8.24

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STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 8:45:06 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571R1AD**	**PCI/SA**		05/10/06 12:25	06/27/06 06:51	06/19/06 10:45	RATA22599	1	1.00 SA	
536403,000456					,J6E250379-7 v4.8.24		FILTER			30.0	06/26/06 10:45	RATA22599 Alq	101%	0.248718 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	37	97	GPC2A	1	N	N	4.3005E-01	1.0000E+00	N	88%	N		1.2959E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.190E-02)	(0.000E+00)		7%			(0.000E+00)	4.020623		
1	06/26/06 14:21	RA-228	22	97	GPC2A	1	N	N	4.3005E-01	1.0000E+00	N	88%	N		1.4376E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.190E-02)	(0.000E+00)		7%			(0.000E+00)	4.020623		
2	06/26/06 15:16	RA-228	14	97	GPC2A	1	N	N	4.3005E-01	1.0000E+00	N	88%	N		1.5949E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.190E-02)	(0.000E+00)		7%			(0.000E+00)	4.020623		
3	06/27/06 06:51	RA-228	21	88	GPC2A	1	N	N	4.3005E-01	1.0000E+00	N	88%	N		9.2202E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.190E-02)	(0.000E+00)		7%			(0.000E+00)	4.020623		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**3.129812**		4.97500E-01	1.705551	1.705551	1.00 SA	88%		2.378248		
				(0.843959)		(1.2412E-01)	(0.449347)	(0.449347)	(0.028284)			1.019241		
	06/27/06	RA-228	R	**1.378368**		1.97500E-01	0.751124	0.751124	1.00 SA	88%		2.638336		
				(0.691404)		(9.6986E-02)	(0.374293)	(0.374293)	(0.028284)			1.130706		
	06/27/06	RA-228	R	**0.290346**	**U4**	3.75000E-02	0.15822	0.15822	1.00 SA	88%		2.926959		
				(0.61068)		(7.8780E-02)	(0.332658)	(0.332658)	(0.028284)			1.254401		
	06/27/06	RA-228	A	**1.599508**		2.44167E-01	0.871632	0.871632	1.00 SA	88%		1.528735		
				(0.416765)		(5.8707E-02)	(0.224269)	(0.224269)	(0.01633)			0.655167		
	06/27/06	RA-228	R	**8.952114**		2.00000E-01	4.878341	4.878341	1.00 SA	88%		16.232246		
				(4.332455)		(9.4604E-02)	(2.344225)	(2.344225)	(0.028284)			6.907213		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571T1AD**	**PCI/SA**		05/10/06 12:10	06/27/06 06:51	06/19/06 10:45	RATA22600	1	1.00 SA	
536403,000457					,J6E250379-8 v4.8.24		FILTER			29.8	06/26/06 10:45	RATA22600 Alq	99%	0.252112 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	31	86	GPC2B	1	N	N	4.4691E-01	1.0000E+00	N	86%	N		1.2959E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.054E-02)	(0.000E+00)		7%			(0.000E+00)	3.966484		
1	06/26/06 14:21	RA-228	35	86	GPC2B	1	N	N	4.4691E-01	1.0000E+00	N	86%	N		1.4376E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.054E-02)	(0.000E+00)		7%			(0.000E+00)	3.966484		
2	06/26/06 15:16	RA-228	20	86	GPC2B	1	N	N	4.4691E-01	1.0000E+00	N	86%	N		1.5949E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.054E-02)	(0.000E+00)		7%			(0.000E+00)	3.966484		
3	06/27/06 06:51	RA-228	14	112	GPC2B	1	N	N	4.4691E-01	1.0000E+00	N	86%	N		9.2202E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.054E-02)	(0.000E+00)		7%			(0.000E+00)	3.966484		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:8

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 8:45:06 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**2.481774**		4.05000E-01	1.370866	1.370866	1.00 SA	86%		2.200634		
				(0.740932)		(1.1374E-01)	(0.401623)	(0.401623)	(0.028284)			0.934808		
	06/27/06	RA-228	R	**3.297022**		4.85000E-01	1.821187	1.821187	1.00 SA	86%		2.441298		
				(0.885046)		(1.2057E-01)	(0.477551)	(0.477551)	(0.028284)			1.037039		
	06/27/06	RA-228	R	**1.395206**		1.85000E-01	0.770675	0.770675	1.00 SA	86%		2.708366		
				(0.71102)		(9.2399E-02)	(0.390245)	(0.390245)	(0.028284)			1.150487		
	06/27/06	RA-228	A	**2.391334**		3.58333E-01	1.320909	1.320909	1.00 SA	86%		1.414566		
				(0.451889)		(6.3257E-02)	(0.245322)	(0.245322)	(0.01633)			0.600894		
	06/27/06	RA-228	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	86%		17.534439		
				(3.460573)		(7.9373E-02)	(1.911528)	(1.911528)	(0.028284)			7.59019		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	TF	FILTER	*STLE	Ra228WoBS	**H571V1AD**	**PCI/SA**		05/10/06 10:10	06/27/06 06:51	06/19/06 10:45	RATA22601	1	1.00 SA	
536403,P-0621					,J6E250379-9 v4.8.24		FILTER			31.3	06/26/06 10:45	RATA22601 Alq	96%	0.252555 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	38	87	GPC2C	1	N	N	4.2956E-01	1.0000E+00	N	88%	N		1.2959E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(9.343E-03)	(0.000E+00)		7%			(0.000E+00)	3.959531		
1	06/26/06 14:21	RA-228	30	87	GPC2C	1	N	N	4.2956E-01	1.0000E+00	N	88%	N		1.4376E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(9.343E-03)	(0.000E+00)		7%			(0.000E+00)	3.959531		
2	06/26/06 15:16	RA-228	21	87	GPC2C	1	N	N	4.2956E-01	1.0000E+00	N	88%	N		1.5949E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(9.343E-03)	(0.000E+00)		7%			(0.000E+00)	3.959531		
3	06/27/06 06:51	RA-228	11	95	GPC2C	1	N	N	4.2956E-01	1.0000E+00	N	88%	N		9.2202E+00	4.5045E-01	1.0133E+00	
			50	400			N		(9.343E-03)	(0.000E+00)		7%			(0.000E+00)	3.959531		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**3.378757**		5.42500E-01	1.869561	1.869561	1.00 SA	88%		2.247659		
				(0.852542)		(1.2547E-01)	(0.459348)	(0.459348)	(0.028284)			0.955615		
	06/27/06	RA-228	R	**2.642784**		3.82500E-01	1.462327	1.462327	1.00 SA	88%		2.493465		
				(0.81845)		(1.1200E-01)	(0.445012)	(0.445012)	(0.028284)			1.060122		
	06/27/06	RA-228	R	**1.552179**		2.02500E-01	0.858864	0.858864	1.00 SA	88%		2.76624		
				(0.74161)		(9.4571E-02)	(0.407377)	(0.407377)	(0.028284)			1.176095		
	06/27/06	RA-228	A	**2.524573**		3.75833E-01	1.396917	1.396917	1.00 SA	88%		1.444793		
				(0.465078)		(6.4318E-02)	(0.252761)	(0.252761)	(0.01633)			0.614268		
	06/27/06	RA-228	R	**-0.775471**	U4	-1.75000E-02	-0.42909	-0.42909	1.00 SA	88%		16.603028		
				(3.132396)		(7.0666E-02)	(1.733067)	(1.733067)	(0.028284)			7.104859		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:10

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 8:45:06 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	TF	FILTER	*STLE	Ra228WoBS	H571X1AD	PCI/SA		05/10/06 10:30	06/27/06 06:51	06/19/06 10:45	RATA22602	1	1.00 SA	
536403,P-0622					,J6E250379-10 v4.8.24		FILTER			31.2	06/26/06 10:45	RATA22602 Alq	87%	0.245067 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	33	89	GPC2D	1	N	N	4.3773E-01	1.0000E+00	N	79%	N		1.2959E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.308E-02)	(0.000E+00)		6%			(0.000E+00)	4.080516		
1	06/26/06 14:21	RA-228	19	89	GPC2D	1	N	N	4.3773E-01	1.0000E+00	N	79%	N		1.4376E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.308E-02)	(0.000E+00)		6%			(0.000E+00)	4.080516		
2	06/26/06 15:16	RA-228	12	89	GPC2D	1	N	N	4.3773E-01	1.0000E+00	N	79%	N		1.5949E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.308E-02)	(0.000E+00)		6%			(0.000E+00)	4.080516		
3	06/27/06 06:51	RA-228	18	105	GPC2D	1	N	N	4.3773E-01	1.0000E+00	N	79%	N		9.2202E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.308E-02)	(0.000E+00)		6%			(0.000E+00)	4.080516		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**3.064888**		4.37500E-01	1.645615	1.645615	1.00 SA	79%		2.552745		
				(0.880124)		(1.1729E-01)	(0.463008)	(0.463008)	(0.028284)			1.08717		
	06/27/06	RA-228	R	**1.224024**		1.57500E-01	0.657209	0.657209	1.00 SA	79%		2.831916		
				(0.713084)		(9.0312E-02)	(0.381006)	(0.381006)	(0.028284)			1.206064		
	06/27/06	RA-228	R	**0.150881**	**U4**	1.75000E-02	0.081012	0.081012	1.00 SA	79%		3.141716		
				(0.631187)		(7.3186E-02)	(0.338868)	(0.338868)	(0.028284)			1.338003		
	06/27/06	RA-228	A	**1.479931**		2.04167E-01	0.794612	0.794612	1.00 SA	79%		1.640902		
				(0.432243)		(5.5044E-02)	(0.229583)	(0.229583)	(0.01633)			0.698832		
	06/27/06	RA-228	R	**4.859725**	**U4**	9.75000E-02	2.609307	2.609307	1.00 SA	79%		19.494951		
				(4.446113)		(8.8635E-02)	(2.382518)	(2.382518)	(0.028284)			8.40171		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	TF	FILTER	*STLE	Ra228WoBS	H57101AD	PCI/SA		05/10/06 10:45	06/27/06 06:51	06/19/06 10:45	RATA22603	1	1.00 SA	
536403,P-0623					,J6E250379-11 v4.8.24		FILTER			30.6	06/26/06 10:45	RATA22603 Alq	94%	0.248628 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	130	81	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	84%	N		1.2964E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.022073		
1	06/26/06 14:21	RA-228	59	81	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	84%	N		1.4382E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.022073		
2	06/26/06 15:17	RA-228	58	81	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	84%	N		1.5955E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.022073		
3	06/27/06 06:51	RA-228	44	73	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	84%	N		9.2237E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.022073		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:11 RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 8:45:06 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**14.538859**		2.39750E+00	7.919729	7.919729	1.00 SA	84%		2.123214		
				(2.037287)		(2.2914E-01)	(1.012226)	(1.012226)	(0.028284)			0.897801		
	06/27/06	RA-228	R	**6.5762**		9.77500E-01	3.582242	3.582242	1.00 SA	84%		2.355485		
				(1.243052)		(1.5526E-01)	(0.645099)	(0.645099)	(0.028284)			0.996017		
	06/27/06	RA-228	R	**7.146338**		9.57500E-01	3.892813	3.892813	1.00 SA	84%		2.613165		
				(1.362653)		(1.5397E-01)	(0.707789)	(0.707789)	(0.028284)			1.104977		
	06/27/06	RA-228	A	**9.420466**		1.44417E+00	5.131595	5.131595	1.00 SA	84%		1.36483		
				(0.916063)		(1.0558E-01)	(0.464485)	(0.464485)	(0.01633)			0.577118		
	06/27/06	RA-228	R	**30.094451**		6.97500E-01	16.393301	16.393301	1.00 SA	84%		14.45961		
				(6.566869)		(1.3437E-01)	(3.450975)	(3.450975)	(0.028284)			6.064145		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	TF	FILTER	*STLE	Ra228WoBS	**H57111AD**	**PCI/SA**		05/10/06 11:20	06/27/06 06:51	06/19/06 10:45	RATA22604	1	1.00 SA	
536403,P-0624					,J6E250379-12 v4.8.24		FILTER			31.2	06/26/06 10:45	RATA22604 Alq	80%	0.24997 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	88	103	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	73%	N		1.2964E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		6%			(0.000E+00)	4.000481		
1	06/26/06 14:21	RA-228	33	103	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	73%	N		1.4382E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		6%			(0.000E+00)	4.000481		
2	06/26/06 15:17	RA-228	30	103	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	73%	N		1.5955E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		6%			(0.000E+00)	4.000481		
3	06/27/06 06:51	RA-228	30	101	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	73%	N		9.2237E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.181E-02)	(0.000E+00)		6%			(0.000E+00)	4.000481		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**10.18972**		1.50250E+00	5.580633	5.580633	1.00 SA	73%		2.630679		
				(1.648854)		(1.8932E-01)	(0.844212)	(0.844212)	(0.028284)			1.132224		
	06/27/06	RA-228	R	**3.028309**		4.02500E-01	1.658523	1.658523	1.00 SA	73%		2.918464		
				(0.937107)		(1.1766E-01)	(0.504307)	(0.504307)	(0.028284)			1.256084		
	06/27/06	RA-228	R	**2.858784**		3.42500E-01	1.565679	1.565679	1.00 SA	73%		3.237732		
				(0.982402)		(1.1244E-01)	(0.530464)	(0.530464)	(0.028284)			1.393495		
	06/27/06	RA-228	A	**5.358938**		7.49167E-01	2.934945	2.934945	1.00 SA	73%		1.691035		
				(0.711961)		(8.3221E-02)	(0.372441)	(0.372441)	(0.01633)			0.727808		
	06/27/06	RA-228	R	**16.767685**		3.47500E-01	9.183206	9.183206	1.00 SA	73%		18.559998		
				(5.68392)		(1.1239E-01)	(3.067903)	(3.067903)	(0.028284)			7.977097		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:13

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 8:45:06 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	TF	FILTER	*STLE	Ra228WoBS	**H57121AD**	**PCI/SA**		05/10/06 12:00	06/27/06 06:51	06/19/06 10:45	RATA22605	1	1.00 SA	
536403,P-0625					,J6E250379-13 v4.8.24		FILTER			29.7	06/26/06 10:45	RATA22605 Alq	78%	0.25105 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	102	105	GPC3C	1	N	N	4.7197E-01	1.0000E+00	N	67%	N		1.2964E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		5%			(0.000E+00)	3.983274		
1	06/26/06 14:21	RA-228	47	105	GPC3C	1	N	N	4.7197E-01	1.0000E+00	N	67%	N		1.4382E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		5%			(0.000E+00)	3.983274		
2	06/26/06 15:17	RA-228	43	105	GPC3C	1	N	N	4.7197E-01	1.0000E+00	N	67%	N		1.5955E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		5%			(0.000E+00)	3.983274		
3	06/27/06 06:51	RA-228	20	122	GPC3C	1	N	N	4.7197E-01	1.0000E+00	N	67%	N		9.2237E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.103E-02)	(0.000E+00)		5%			(0.000E+00)	3.983274		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	iDC/iLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**13.255586**		1.77750E+00	7.291152	7.291152	1.00 SA	67%		2.916785		
				(2.026276)		(2.0361E-01)	(1.032845)	(1.032845)	(0.028284)			1.257042		
	06/27/06	RA-228	R	**5.605123**		6.77500E-01	3.083063	3.083063	1.00 SA	67%		3.235869		
				(1.285926)		(1.3949E-01)	(0.684783)	(0.684783)	(0.028284)			1.394557		
	06/27/06	RA-228	R	**5.484036**		5.97500E-01	3.01646	3.01646	1.00 SA	67%		3.589859		
				(1.346242)		(1.3363E-01)	(0.719932)	(0.719932)	(0.028284)			1.547116		
	06/27/06	RA-228	A	**8.114915**		1.01750E+00	4.463558	4.463558	1.00 SA	67%		1.874947		
				(0.917228)		(9.3553E-02)	(0.477726)	(0.477726)	(0.01633)			0.808043		
	06/27/06	RA-228	R	**5.040614**	**U4**	9.50000E-02	2.772558	2.772558	1.00 SA	67%		22.145625		
				(4.992905)		(9.3608E-02)	(2.741694)	(2.741694)	(0.028284)			9.640635		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	TF	FILTER	*STLE	Ra228WoBS	**H57131AD**	**PCI/SA**		05/10/06 12:15	06/27/06 06:51	06/19/06 10:45	RATA22606	1	1.00 SA	
536403,P-0626					,J6E250379-14 v4.8.24		FILTER			30.9	06/26/06 10:45	RATA22606 Alq	96%	0.249877 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	88	91	GPC3D	1	N	N	4.6782E-01	1.0000E+00	N	86%	N		1.2964E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	4.001974		
1	06/26/06 14:21	RA-228	46	91	GPC3D	1	N	N	4.6782E-01	1.0000E+00	N	86%	N		1.4382E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	4.001974		
2	06/26/06 15:17	RA-228	38	91	GPC3D	1	N	N	4.6782E-01	1.0000E+00	N	86%	N		1.5955E+00	4.5045E-01	1.0132E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	4.001974		
3	06/27/06 06:51	RA-228	25	106	GPC3D	1	N	N	4.6782E-01	1.0000E+00	N	86%	N		9.2237E+00	4.5045E-01	1.0132E+00	
			50	400			N		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	4.001974		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:14 RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 8:45:06 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**8.995315**		1.53250E+00	4.924714	4.924714	1.00 SA	86%		2.159226		
				(1.43725)		(1.8913E-01)	(0.734243)	(0.734243)	(0.028284)			0.921091		
	06/27/06	RA-228	R	**4.509435**		6.92500E-01	2.468805	2.468805	1.00 SA	86%		2.395436		
				(1.006863)		(1.3773E-01)	(0.532676)	(0.532676)	(0.028284)			1.021854		
	06/27/06	RA-228	R	**3.846879**		5.32500E-01	2.106072	2.106072	1.00 SA	86%		2.657486		
				(0.987603)		(1.2557E-01)	(0.526979)	(0.526979)	(0.028284)			1.133641		
	06/27/06	RA-228	A	**5.783876**		9.19167E-01	3.166531	3.166531	1.00 SA	86%		1.387979		
				(0.671219)		(8.8510E-02)	(0.349693)	(0.349693)	(0.01633)			0.592089		
	06/27/06	RA-228	R	**9.814185**		2.35000E-01	5.373026	5.373026	1.00 SA	86%		16.401178		
				(4.425888)		(1.0326E-01)	(2.403326)	(2.403326)	(0.028284)			7.073025		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	TF	FILTER	*STLE	Ra228WoBS	**H57141AD**	**PCI/SA**		05/10/06 10:15	06/27/06 06:51	06/19/06 10:45	RATA22607	1	1.00 SA	
536403,P-0627					,J6E250379-15 v4.8.24		FILTER			31.6	06/26/06 10:45	RATA22607 Alq	90%	0.250121 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	179	144	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	83%	N		1.2968E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	3.998066		
1	06/26/06 14:22	RA-228	83	144	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	83%	N		1.4387E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	3.998066		
2	06/26/06 15:17	RA-228	55	144	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	83%	N		1.5960E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	3.998066		
3	06/27/06 06:51	RA-228	35	177	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	83%	N		9.2263E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	3.998066		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**19.148404**		3.22000E+00	10.493239	10.493239	1.00 SA	83%		2.668678		
				(2.512516)		(2.6926E-01)	(1.237883)	(1.237883)	(0.028284)			1.17388		
	06/27/06	RA-228	R	**8.576431**		1.30000E+00	4.699845	4.699845	1.00 SA	83%		2.960621		
				(1.495399)		(1.8466E-01)	(0.77372)	(0.77372)	(0.028284)			1.302298		
	06/27/06	RA-228	R	**5.415865**		7.40000E-01	2.96787	2.96787	1.00 SA	83%		3.284397		
				(1.235521)		(1.5133E-01)	(0.655243)	(0.655243)	(0.028284)			1.444719		
	06/27/06	RA-228	A	**11.0469**		1.75333E+00	6.053652	6.053652	1.00 SA	83%		1.715442		
				(1.058063)		(1.1995E-01)	(0.533369)	(0.533369)	(0.01633)			0.754577		
	06/27/06	RA-228	R	**10.894589**		2.57500E-01	5.970186	5.970186	1.00 SA	83%		20.801097		
				(5.315508)		(1.2291E-01)	(2.892614)	(2.892614)	(0.028284)			9.25947		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:16

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 8:45:07 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	TF	FILTER	*STLE	Ra228WoBS	**H6A3J1AA**	**PCI/SA**	**B**	05/10/06 10:20	06/27/06 06:51	06/19/06 10:45		1	1.00 SA	
0,INTRA-LAB BLANK					,J6E260000-452		FILTER			30.8	06/26/06 10:45		86%	1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	49	105	GPC4B	1	N	N	4.6215E-01	1.0000E+00	N	77%	N		1.2968E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
1	06/26/06 14:22	RA-228	27	105	GPC4B	1	N	N	4.6215E-01	1.0000E+00	N	77%	N		1.4387E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
2	06/26/06 15:17	RA-228	20	105	GPC4B	1	N	N	4.6215E-01	1.0000E+00	N	77%	N		1.5960E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
3	06/27/06 06:51	RA-228	19	122	GPC4B	1	N	N	4.6215E-01	1.0000E+00	N	77%	N		9.2263E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yid,EFctU	iDC/iLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**1.186936**		7.17500E-01	2.600488	2.600488	1.00 SA	77%		0.647024		
				(0.262904)		(1.4232E-01)	(0.559324)	(0.559324)	(0.017321)			0.278847		
	06/27/06	RA-228	R	**0.509278**		2.77500E-01	1.11579	1.11579	1.00 SA	77%		0.717806		
				(0.202744)		(1.0703E-01)	(0.440256)	(0.440256)	(0.017321)			0.309352		
	06/27/06	RA-228	R	**0.279942**	**U4**	1.37500E-01	0.613331	0.613331	1.00 SA	77%		0.796306		
				(0.191421)		(9.3039E-02)	(0.418131)	(0.418131)	(0.017321)			0.343183		
	06/27/06	RA-228	A	**0.658719**		3.77500E-01	1.443203	1.443203	1.00 SA	77%		0.415911		
				(0.127743)		(6.6973E-02)	(0.275177)	(0.275177)	(0.01)			0.179244		
	06/27/06	RA-228	R	**0.882721**	**U4**	7.50000E-02	1.933976	1.933976	1.00 SA	77%		4.912364		
				(1.079803)		(9.1447E-02)	(2.363554)	(2.363554)	(0.017321)			2.138495		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
17	Calc	TF	FILTER	*STLE	Ra228WoBS	**H6A3J1AC**	**PCI/SA**	**S**	05/10/06 10:20	06/27/06 06:51	06/19/06 10:45	RASC4119	1	1.00 SA	
0,INTRA-LAB CHECK					,J6E260000-452		FILTER			31.1	06/26/06 10:45		93%	1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/26/06 13:26	RA-228	219	100	GPC4C	1	N	N	4.6870E-01	1.0000E+00	N	84%	N		1.2968E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.147E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
1	06/26/06 14:22	RA-228	171	100	GPC4C	1	N	N	4.6870E-01	1.0000E+00	N	84%	N		1.4387E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.147E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
2	06/26/06 15:17	RA-228	134	100	GPC4C	1	N	N	4.6870E-01	1.0000E+00	N	84%	N		1.5960E+00	4.5045E-01	1.0133E+00	
			50	400			Y		(1.147E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
3	06/27/06 06:51	RA-228	35	111	GPC4C	1	N	N	4.6870E-01	1.0000E+00	N	84%	N		9.2263E+00	4.5045E-01	1.0133E+00	
			50	400			N		(1.147E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146452

Alpha Beta, Ra-228 by GPC , Calculated Results

6/27/2006 8:45:07 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-228	R	**6.227934**		4.13000E+00	13.644935	13.644935	1.00 SA	84%	122%	0.577561		
				(0.762042)		(2.9703E-01)	(1.505381)	(1.505381)	(0.017321)			0.248062		
	06/27/06	RA-228	R	**5.303221**		3.17000E+00	11.618959	11.618959	1.00 SA	84%	104%	0.640744		
				(0.684674)		(2.6273E-01)	(1.368286)	(1.368286)	(0.017321)			0.275199		
	06/27/06	RA-228	R	**4.509825**		2.43000E+00	9.880687	9.880687	1.00 SA	84%	88%	0.710816		
				(0.621347)		(2.3286E-01)	(1.25692)	(1.25692)	(0.017321)			0.305295		
	06/27/06	RA-228	A	**5.346993**		3.24333E+00	11.71486	11.71486	1.00 SA	84%	104%	0.37126		
				(0.399383)		(1.5329E-01)	(0.797094)	(0.797094)	(0.01)			0.159456		
	06/27/06	RA-228	R	**4.532915**		4.22500E-01	9.931276	9.931276	1.00 SA	84%	89%	4.298139		
				(1.375755)		(1.2122E-01)	(2.968012)	(2.968012)	(0.017321)			1.859423		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17

RADCALC v4.8.24

STL Richland

RADIUM 226

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/27/2006 10:02:43 AM

Lot No., Due Date: J6E250379; 06/22/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6146445; RRA2267 Ra-226 by ASC-7

SDG, Matrix: 31758; FILTER

1.0 COC

1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes ✓	No	N/A

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes ✓	No	N/A
2.2 Are the QC appropriate for the analysis included in the batch?	Yes ✓	No	N/A
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes ✓	No	N/A
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes ✓	No	N/A

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A ✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes	No	N/A ✓
3.5 Are the sample yields and MDAs within contract limits?	Yes ✓	No	N/A

4.0 Raw Data

4.1 Were results calculated in the correct units?	Yes ✓	No	N/A
4.2 Were analysis volumes entered correctly?	Yes ✓	No	N/A
4.3 Were Yields entered correctly?	Yes ✓	No	N/A
4.4 Were spectra reviewed/meet contractual requirements?	Yes ✓	No	N/A
4.5 Were raw counts reviewed for anomalies?	Yes ✓	No	N/A

5.0 Other

5.1 Are all nonconformances included and noted?	Yes	No	N/A ✓
5.2 Are all required forms filled out?	Yes ✓	No	N/A
5.3 Was the correct methodology used?	Yes ✓	No	N/A
5.4 Was transcription checked?	Yes ✓	No	N/A
5.5 Were all calculations checked at a minimum frequency?	Yes ✓	No	N/A
5.6 Are worksheet entries complete and correct?	Yes ✓	No	N/A

6.0 Comments on any No response:

First Level Review Pam Anderson **Date** 6-27-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6146445

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?			✓
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Sheryl A Adam Date: 6-27-06

STL RICHLAND

6/16/2006 7:55:11 AM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 06/21/2006

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Balance Id:1120373922,206120

Pipet #:

Sep1 DT/Tm Tech: 6-19-6 M 10:45

Sep2 DT/Tm Tech:

Prep Tech: HansenM,TamosaitisM

Batch: 6146445 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6146452, BXTF

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 H5709-1-AC J6E250379-1-SAMP	0.833sa,g	500.31sa,g	150.37g,in	0.2504g	RATA22593 06/13/06					
				7.5462 =			610	1347	6/19/06	
				6.819 -				6-20-6 M	14:46	
				1.1066 -			1HB	6/24/06	1025	R
05/10/2006 10:20		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
2 H571F-1-AC J6E250379-2-SAMP	0.833sa,g	502.43sa,g	150.21g,in	0.249g	RATA22594 06/13/06					
				7.5462 =			9"	1420	6/19/06	
				6.35 -				6-20-6 M	14:46	
				1.1884			2RC	6/24/06	1024	R
05/10/2006 10:35		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
3 H571G-1-AC J6E250379-3-SAMP	0.833sa,g	501.65sa,g	151.10g,in	0.2509g	RATA22595 06/13/06					
				7.4768 =			610	1421	6/19/06	
				6.107 -				6-20-6 M	14:46	
				1.2243 -			3HA	6/24/06	1025	R
05/10/2006 10:50		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
4 H571M-1-AC J6E250379-4-SAMP	0.833sa,g	501.39sa,g	151.16g,in	0.2511g	RATA22596 06/13/06					
				7.5561 =			613	1421	6/19/06	
				6.947 -				6-20-6 M	14:46	
				1.0877			4HA	6/24/06	1026	R
05/10/2006 11:25		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL RICHLAND

6/16/2006 7:55:11 AM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Balance Id:1120373922,1120373922,1120

Pipet #: _____

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146445 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: 6146452, BXTF

Sep2 DT/Tm Tech:

Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
5 H571N-1-AC J6E250379-5-SAMP	0.833sa,g	500.72sa,g	151.73g,in	0.2524g	RATA22597 06/13/06					
				7.5363			612	1422	6/19/2006	
				6.494				6-20-6 M	15:02	
				1.1605			7UA	6/24/06	1024 r	
05/10/2006 12:05		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
6 H571Q-1-AC J6E250379-6-SAMP	0.833sa,g	501.55sa,g	150.68g,in	0.2503g	RATA22598 06/13/06		9	1455	6/19/06	
				7.5264						
				6.85				6-20-6 M	15:02	
				1.0987			8RD	6/24/06	1026 r	
05/10/2006 12:20		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
7 H571R-1-AC J6E250379-7-SAMP	0.833sa,g	503.75sa,g	150.41g,in	0.2487g	RATA22599 06/13/06		G10	1456	6/19/06	
				7.5164						
				7.576				6-20-6 M	15:02	
				0.9921			9RC	6/24/06	1025 r	
05/10/2006 12:25		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
8 H571T-1-AC J6E250379-8-SAMP	0.833sa,g	501.13sa,g	151.67g,in	0.2521g	RATA22600 06/13/06		G12	1457	6/19/06	
				7.5164						
				7.433				6-20-6 M	15:02	
				1.0112			DSA	6/24/06	1104 e	
05/10/2006 12:10		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL RICHLAND

6/16/2006 7:55:12 AM

Sample Preparation/Analysis

Balance Id:1120373922,1120373922,1120

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Pipet #:

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146445 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: 6146452, BXTF

Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
9 H571V-1-AC J6E250379-9-SAMP	0.833sa,g	501.34sa,g	152.00g,in	0.2526g 7.5065 7.222 1.0394	RATA22601 06/13/06		G13 6-20-6 M EHA	1457 15:22 6/24/06 1102 R	6/19/06	
05/10/2006 10:10		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
10H571X-1-AC J6E250379-10-SAMP	0.833sa,g	511.39sa,g	150.45g,in	0.2451g 7.5363 6.54 1.1523	RATA22602 06/13/06		G11 6-20-6 M GSA	1530 15:22 6/24/06 1104 R	6/19/06	
05/10/2006 10:30		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
11H5710-1-AC J6E250379-11-SAMP	0.833sa,g	506.21sa,g	151.09g,in	0.2486g 7.5263 6.847 1.0608	RATA22603 06/13/06		G10 6-20-6 M JMB	1531 15:22 6/24/06 1102 R	6/19/06	
05/10/2006 10:45		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
12H5711-1-AC J6E250379-12-SAMP	0.833sa,g	500.36sa,g	150.15g,in	0.25g 7.5263 6.043 1.2455	RATA22604 06/13/06		G12 6-20-6 M KME	1531 15:22 6/24/06 1103 R	6/19/06	
05/10/2006 11:20		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:

STL RICHLAND

6/16/2006 7:55:12 AM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 06/21/2006

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Batch: 6146445 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6146452, BXTF

Balance Id:1120373922,1120373922,1120
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
13H5712-1-AC J6E250379-13-SAMP	0.833sa,g	500.63sa,g	150.88g,in	0.251g	RATA22605 06/13/06		G13	1532	6/19/06 OP	
				7.5363 =						
				5.845				6-20-6 M	15:55	
				1.2894			BMB	6/24/06	1104 R	
05/10/2006 12:00		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
14H5713-1-AC J6E250379-14-SAMP	0.833sa,g	500.78sa,g	150.22g,in	0.2499g	RATA22606 06/13/06		G13	1608	6/19/06 OP	
				7.5263 =						
				7.225				6-20-6 M	~~15:20~~ AME	15:55
				1.0417			HMA	6/24/06	1102 R	
05/10/2006 12:15		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
15H5714-1-AC J6E250379-15-SAMP	0.833sa,g	501.49sa,g	150.58g,in	0.2501g	RATA22607 06/13/06		G12	1608	6/19/06 OP	
				7.5561 =						
				6.797				6-20-6 M	15:55	
				1.1117			LMC	6/24/06	1144 R	
05/10/2006 10:15		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
16H6A1V-1-AA-B J6E260000-445-BLK			1.00sa,in	1.00sa	RATA22608 06/13/06		G10	1609	6/19/06 OP	
				7.5462 =						
				6.525				6-20-6 M	15:55	
				1.1565			NMA	6/24/06	1142 R	
05/10/2006 10:20		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:

6/16/2006 7:55:13 AM

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Balance Id:1120373922,1120373922,1120

Pipet #: _____

AnalyDueDate: 06/21/2006

Sep1 DT/Tm Tech:

Batch: 6146445 pCi/sampl
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
17H6A1V-1-AC-C J6E260000-445-LCS			1.00sa,in	1.00sa 7.4925= 6.94- 1.0796-	RASC4119 06/09/06		9"	'608	6/19/06 ord 6-20-6 M 15:55 PMB 6/24/06 1144 R	

05/10/2006 10:20 AmtRec: #Containers: 1 Scr: Alpha: Beta:

Comments: H5709-SAMP Comments

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H57091AC-SAMP Constituent List:

Ba-133	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20	Ra-226	RDL:1.00E+00	pCi/sam	LCL:	UCL:	RPD:

H6A1V1AA-BLK:

Ba-133	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20	Ra-226	RDL:1.00E+00	pCi/sam	LCL:	UCL:	RPD:

H6A1V1AC-LCS:

Ba-133	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20	Ra-226	RDL:1	pCi/sam	LCL:70	UCL:130	RPD:20

H57091AC-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H6A1V1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H6A1V1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

6/27/2006 7:55:11 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/27/2005, 7/2/2006, Batch: '6146445', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6146445						
AC		**InSep2**	**HansenM**	6/13/2006 1:39:10 PM		
SC			tamosaitism	IsBatched	5/26/2006 2:31:31 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/13/2006 1:39:10 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/15/2006 5:25:58 PM	RICH-RC-5016 REVISION 5
SC			TamosaitisM	InPrep	6/16/2006 7:51:24 AM	RICH-RC-5005 Revision 5
SC			TamosaitisM	Sep1C	6/19/2006 9:44:41 AM	RICH-RC-5005 REVISION 4
SC			BlackCL	InCnt1	6/19/2006 11:22:58 AM	RICH-RD-0007 REVISION 5
SC			DAWKINSO	Cnt1C	6/19/2006 5:54:58 PM	RICH-RD-0007 REVISION 5
SC			TamosaitisM	InSep2	6/20/2006 7:55:27 AM	RICH-RC-5005 REVISION 5
AC			**HansenM**	6/15/2006 5:25:58 PM		
AC			**TamosaitisM**	6/16/2006 7:51:24		
AC			**TamosaitisM**	6/19/2006 9:44:41		
AC			**BlackCL**	6/19/2006 11:22:58		
AC			**DAWKINSO**	6/19/2006 5:54:58 PM		
AC			**TamosaitisM**	6/20/2006 7:55:27		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 7

ICOCFractions v4.8.18

6/27/2006 7:55:10 AM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
31758	**9H570910**			**J6E2503791**	000450	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM				
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**1.0298E+01**	2.869E+00	3.064E+00	8.319E+00	PCI/SA	1.0	1.0E+0	2.093E-2
BETA	BDS8		0	6/20/2006 2:03:16 PM	**4.4442E+01**	2.683E+00	4.815E+00	6.021E+00	PCI/SA	1.0	1.0E+0	3.346E-2
RA-226	BXTE		0	6/24/2006 1:25:01 PM	**2.9344E-01**	2.202E-01	2.222E-01	7.659E-01	PCI/SA	0.904	1.0E+0	2.504E-1
31758	**9H571010**			**J6E25037911**	P-0623	FILTER	5/25/2006 10:00:00	5/10/2006 10:45:00 AM				
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**7.1046E+01**	6.941E+00	1.016E+01	9.566E+00	PCI/SA	1.0	1.0E+0	2.073E-2
BETA	BDS8		0	6/20/2006 4:02:16 PM	**1.549E+02**	4.677E+00	1.173E+01	6.441E+00	PCI/SA	1.0	1.0E+0	3.266E-2
RA-226	BXTE		0	6/24/2006 2:02:00 PM	**1.3001E+00**	2.242E-01	2.606E-01	4.298E-01	PCI/SA	0.943	1.0E+0	2.486E-1
31758	**9H571110**			**J6E25037912**	P-0624	FILTER	5/25/2006 10:00:00	5/10/2006 11:20:00 AM				
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**5.3238E+00**	2.048E+00	2.122E+00	6.394E+00	PCI/SA	1.0	1.0E+0	2.113E-2
BETA	BDS8		0	6/20/2006 4:02:16 PM	**3.3468E+01**	2.452E+00	3.66E+00	6.231E+00	PCI/SA	1.0	1.0E+0	3.344E-2
RA-226	BXTE		0	6/24/2006 2:03:00 PM	**8.364E-01**	2.672E-01	2.798E-01	7.382E-01	PCI/SA	0.803	1.0E+0	2.5E-1
31758	**9H571210**			**J6E25037913**	P-0625	FILTER	5/25/2006 10:00:00	5/10/2006 12:00:00 PM				
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**6.673E+00**	2.279E+00	2.383E+00	6.679E+00	PCI/SA	1.0	1.0E+0	2.095E-2
BETA	BDS8		0	6/20/2006 4:02:16 PM	**3.475E+01**	2.592E+00	3.884E+00	6.718E+00	PCI/SA	1.0	1.0E+0	3.336E-2
RA-226	BXTE		0	6/24/2006 2:04:00 PM	**1.0922E-01**	2.375E-01	2.378E-01	8.892E-01	PCI/SA	0.776	1.0E+0	2.51E-1
31758	**9H571310**			**J6E25037914**	P-0626	FILTER	5/25/2006 10:00:00	5/10/2006 12:15:00 PM				
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**5.2958E+00**	1.995E+00	2.067E+00	6.113E+00	PCI/SA	1.0	1.0E+0	2.096E-2
BETA	BDS8		0	6/20/2006 4:05:03 PM	**2.5918E+01**	2.289E+00	2.94E+00	6.465E+00	PCI/SA	1.0	1.0E+0	3.415E-2
RA-226	BXTE		0	6/24/2006 2:02:03 PM	**1.5696E-02**	1.185E-01	1.185E-01	4.848E-01	PCI/SA	0.96	1.0E+0	2.499E-1
31758	**9H571410**			**J6E25037915**	P-0627	FILTER	5/25/2006 10:00:00	5/10/2006 10:15:00 AM				
ALPHA	BAS7		0	6/21/2006 1:23:40 PM	**2.5759E+00**	1.532E+00	1.554E+00	5.551E+00	PCI/SA	1.0	1.0E+0	2.096E-2
BETA	BDS8		0	6/20/2006 4:05:03 PM	**2.64E+01**	2.228E+00	3.165E+00	5.976E+00	PCI/SA	1.0	1.0E+0	3.324E-2
RA-226	BXTE		0	6/24/2006 2:44:00 PM	**2.3057E-01**	1.641E-01	1.66E-01	5.665E-01	PCI/SA	0.9	1.0E+0	2.501E-1
31758	**9H571F10**			**J6E2503792**	000451	FILTER	5/25/2006 10:00:00	5/10/2006 10:35:00 AM				
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**7.5196E+00**	2.329E+00	2.457E+00	6.451E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8		0	6/20/2006 2:03:16 PM	**3.3469E+01**	2.585E+00	3.53E+00	7.012E+00	PCI/SA	1.0	1.0E+0	3.334E-2
RA-226	BXTE		0	6/24/2006 1:24:02 PM	**5.6233E-02**	1.553E-01	1.554E-01	6.207E-01	PCI/SA	0.841	1.0E+0	2.49E-1
31758	**9H571G10**			**J6E2503793**	000452	FILTER	5/25/2006 10:00:00	5/10/2006 10:50:00 AM				
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**8.3814E+00**	2.486E+00	2.635E+00	6.711E+00	PCI/SA	1.0	1.0E+0	2.077E-2
BETA	BDS8		0	6/20/2006 4:02:18 PM	**3.6893E+01**	2.583E+00	3.739E+00	6.749E+00	PCI/SA	1.0	1.0E+0	3.321E-2
RA-226	BXTE		0	6/24/2006 1:25:00 PM	**-3.8645E-01**	2.412E-01	2.443E-01	1.027E+00	PCI/SA	0.817	1.0E+0	2.509E-1
31758	**9H571M10**			**J6E2503794**	000453	FILTER	5/25/2006 10:00:00	5/10/2006 11:25:00 AM				
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**1.0018E+01**	2.543E+00	2.744E+00	6.144E+00	PCI/SA	1.0	1.0E+0	2.088E-2
BETA	BDS8		0	6/20/2006 4:02:18 PM	**4.4018E+01**	2.765E+00	4.159E+00	6.617E+00	PCI/SA	1.0	1.0E+0	3.324E-2
RA-226	BXTE		0	6/24/2006 1:26:00 PM	**1.6183E-01**	1.52E-01	1.53E-01	5.496E-01	PCI/SA	0.919	1.0E+0	2.511E-1
31758	**9H571N10**			**J6E2503795**	000454	FILTER	5/25/2006 10:00:00	5/10/2006 12:05:00 PM				
ALPHA	BAS7		0	6/21/2006 9:37:56 AM	**7.6052E+00**	2.27E+00	2.401E+00	5.544E+00	PCI/SA	1.0	1.0E+0	2.088E-2
BETA	BDS8		0	6/20/2006 4:02:18 PM	**3.0106E+01**	2.462E+00	3.228E+00	6.611E+00	PCI/SA	1.0	1.0E+0	3.355E-2
RA-226	BXTE		0	6/24/2006 1:24:00 PM	**2.1868E-01**	1.766E-01	1.782E-01	6.226E-01	PCI/SA	0.862	1.0E+0	2.524E-1
31758	**9H571Q10**			**J6E2503796**	000455	FILTER	5/25/2006 10:00:00	5/10/2006 12:20:00 PM				
ALPHA	BAS7		0	6/21/2006 11:30:00	**5.888E+00**	2.404E+00	2.481E+00	8.28E+00	PCI/SA	1.0	1.0E+0	2.091E-2
BETA	BDS8		0	6/20/2006 4:02:18 PM	**3.9594E+01**	2.647E+00	3.775E+00	6.341E+00	PCI/SA	1.0	1.0E+0	3.357E-2
RA-226	BXTE		0	6/24/2006 1:26:00 PM	**-9.0912E-02**	2.105E-01	2.108E-01	8.933E-01	PCI/SA	0.91	1.0E+0	2.503E-1
31758	**9H571R10**			**J6E2503797**	000456	FILTER	5/25/2006 10:00:00	5/10/2006 12:25:00 PM				
ALPHA	BAS7		0	6/21/2006 11:30:00	**-5.3806E-01**	1.049E+00	1.05E+00	6.462E+00	PCI/SA	1.0	1.0E+0	2.082E-2
BETA	BDS8		0	6/20/2006 4:02:22 PM	**1.8366E+00**	1.466E+00	1.472E+00	6.221E+00	PCI/SA	1.0	1.0E+0	3.334E-2
RA-226	BXTE		0	6/24/2006 1:25:00 PM	**2.9856E-01**	2.182E-01	2.203E-01	7.57E-01	PCI/SA	1.008	1.0E+0	2.487E-1
31758	**9H571T10**			**J6E2503798**	000457	FILTER	5/25/2006 10:00:00	5/10/2006 12:10:00 PM				
ALPHA	BAS7		0	6/21/2006 11:30:00	**0.0E+00**	0.0E+00	1.22E+00	6.687E+00	PCI/SA	1.0	1.0E+0	2.083E-2
BETA	BDS8		0	6/20/2006 4:02:22 PM	**1.6761E+00**	1.28E+00	1.292E+00	5.419E+00	PCI/SA	1.0	1.0E+0	3.393E-2
RA-226	BXTE		0	6/24/2006 2:04:01 PM	**3.0013E-01**	1.81E-01	1.835E-01	6.023E-01	PCI/SA	0.989	1.0E+0	2.521E-1

6146445, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
31758	**9H571V10**			**J6E2503799**	P-0621	FILTER	5/25/2006 10:00:00	5/10/2006 10:10:00 AM				
ALPHA	BAS7	0		6/21/2006 11:30:00	**4.2238E+00**	1.84E+00	1.89E+00	6.065E+00	PCI/SA	1.0	1.0E+0	2.113E-2
BETA	BDS8	0		6/20/2006 4:02:22 PM	**2.8114E+01**	2.298E+00	2.998E+00	6.19E+00	PCI/SA	1.0	1.0E+0	3.331E-2
RA-226	BXTE	0		6/24/2006 2:02:00 PM	**1.716E-01**	2.16E-01	2.168E-01	7.836E-01	PCI/SA	0.962	1.0E+0	2.526E-1
31758	**9H571X10**			**J6E25037910**	P-0622	FILTER	5/25/2006 10:00:00	5/10/2006 10:30:00 AM				
ALPHA	BAS7	0		6/21/2006 11:30:00	**6.6226E+00**	2.172E+00	2.277E+00	5.66E+00	PCI/SA	1.0	1.0E+0	2.046E-2
BETA	BDS8	0		6/20/2006 4:02:22 PM	**2.6877E+01**	2.285E+00	2.952E+00	6.192E+00	PCI/SA	1.0	1.0E+0	3.167E-2
RA-226	BXTE	0		6/24/2006 2:04:01 PM	**3.3431E-02**	1.685E-01	1.685E-01	6.735E-01	PCI/SA	0.868	1.0E+0	2.451E-1
31758	**H6A1V1AB**			**J6E260000445**	INTRA-LAB BLANK	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM				
RA-226	BXTE	0	B	6/24/2006 2:42:00 PM	**2.471E-02**	4.681E-02	4.687E-02	1.763E-01	PCI/SA	0.865	1.0E+0	1.0E+0
31758	**H6A1V1CS**			**J6E260000445**	INTRA-LAB CHECK	FILTER	5/25/2006 10:00:00	5/10/2006 10:20:00 AM				
RA-226	BXTE	0	S	6/24/2006 2:44:00 PM	**1.3607E+00**	1.073E-01	1.763E-01	1.162E-01	PCI/SA	1.4183E+00	0.926	1.0E+0	1.0E+0

6146445, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 15,
**Results Inserted | ReTestInserted | Updated | NotInserted => 17 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

Batch Nbr: 6146445

Alpha Beta, Ra-226 by ASC-7 , Results

6/27/2006 7:35:40 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Ra-226 by ASC-7				Richland Standard Ra-226/Ra-228 Deem Wo Blk Subt.										
Calc	TE	FILTER	**H57091AC**	RA-226	**2.93E-01**	**(2.22E-01)**	**U4**	PCI/SA	R	3.37E-01	7.66E-01	CRDL met	90%	
Calc	TE	FILTER	**H571F1AC**	RA-226	**5.62E-02**	**(1.55E-01)**	**U4**	PCI/SA	R	2.53E-01	6.21E-01		84%	
Calc	TE	FILTER	**H571G1AC**	RA-226	**-3.86E-01**	**(2.44E-01)**	**U4**	PCI/SA	R	4.63E-01	1.03E+00	K	82%	
Calc	TE	FILTER	**H571M1AC**	RA-226	**1.62E-01**	**(1.53E-01)**	**U4**	PCI/SA	R	2.24E-01	5.50E-01		92%	
Calc	TE	FILTER	**H571N1AC**	RA-226	**2.19E-01**	**(1.78E-01)**	**U4**	PCI/SA	R	2.59E-01	6.23E-01		86%	
Calc	TE	FILTER	**H571Q1AC**	RA-226	**-9.09E-02**	**(2.11E-01)**	**U4**	PCI/SA	R	3.80E-01	8.93E-01		91%	
Calc	TE	FILTER	**H571R1AC**	RA-226	**2.99E-01**	**(2.20E-01)**	**U4**	PCI/SA	R	3.24E-01	7.57E-01		101%	
Calc	TE	FILTER	**H571T1AC**	RA-226	**3.00E-01**	**(1.83E-01)**	**U4**	PCI/SA	R	2.46E-01	6.02E-01		99%	
Calc	TE	FILTER	**H571V1AC**	RA-226	**1.72E-01**	**(2.17E-01)**	**U4**	PCI/SA	R	3.48E-01	7.84E-01		96%	
Calc	TE	FILTER	**H571X1AC**	RA-226	**3.34E-02**	**(1.69E-01)**	**U4**	PCI/SA	R	2.83E-01	6.74E-01		87%	
Calc	TE	FILTER	**H57101AC**	RA-226	**1.30E+00**	**(2.61E-01)**		PCI/SA	R	1.73E-01	4.30E-01		94%	
Calc	TE	FILTER	**H57111AC**	RA-226	**8.36E-01**	**(2.80E-01)**		PCI/SA	R	3.04E-01	7.38E-01		80%	
Calc	TE	FILTER	**H57121AC**	RA-226	**1.09E-01**	**(2.38E-01)**	**U4**	PCI/SA	R	3.93E-01	8.89E-01		78%	
Calc	TE	FILTER	**H57131AC**	RA-226	**1.57E-02**	**(1.19E-01)**	**U4**	PCI/SA	R	2.00E-01	4.85E-01		96%	
Calc	TE	FILTER	**H57141AC**	RA-226	**2.31E-01**	**(1.66E-01)**	**U4**	PCI/SA	R	2.38E-01	5.66E-01		90%	
Calc	TE	FILTER	**H6A1V1AA**	RA-226	**2.47E-02**	**(4.69E-02)**	**U4**	PCI/SA	R	7.64E-02	1.76E-01	**B**	86%	
Calc	TE	FILTER	**H6A1V1AC**	RA-226	**1.36E+00**	**(1.76E-01)**		PCI/SA	R	4.74E-02	1.16E-01	**S**	93%	96%

P Anderson
6-27-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17
RADCALC v4.8.24
STL Richland

Batch Nbr: 6146445

Alpha Beta, Ra-226 by ASC-7 , Calculated Results
Detailed Report

6/27/2006 7:35:41 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	TE	FILTER	*STLE	Ra226WoBS	**H57091AC**	**PCI/SA**		05/10/06 10:20	06/24/06 13:25	06/20/06 14:46	RATA22593	1	1.00 Sa	
CID:000450LOT:J6E2503791 v4.8.24							FILTER				06/24/06 10:25	RATA22593 Alq	90%	0.250361 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 13:25	RA-226	27	22	ASC1HB	ASC		N	2.4125E+00	1.0000E+00	N	90%	N		2.0513E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(7.648E-02)	(0.000E+00)		7%			(0.000E+00)	3.994229		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**0.29344**	**U4**	1.73333E-01	0.163087	0.163087	1.00 Sa	90%		0.765882		
				(0.222236)		(1.3004E-01)	(0.123157)	(0.123157)	(0.028284)			0.337263		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	TE	FILTER	*STLE	Ra226WoBS	**H571F1AC**	**PCI/SA**		05/10/06 10:35	06/24/06 13:24	06/20/06 14:46	RATA22594	1	1.00 Sa	
CID:000451LOT:J6E2503792 v4.8.24							FILTER				06/24/06 10:24	RATA22594 Alq	84%	0.24904 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 13:24	RA-226	8	8	ASC2RC	ASC		N	2.0913E+00	1.0000E+00	N	84%	N		2.0515E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(6.818E-02)	(0.000E+00)		7%			(0.000E+00)	4.015427		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**0.056233**	**U4**	2.66667E-02	0.031088	0.031088	1.00 Sa	84%		0.620654		
				(0.155388)		(7.3636E-02)	(0.085886)	(0.085886)	(0.028284)			0.253331		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	TE	FILTER	*STLE	Ra226WoBS	**H571G1AC**	**PCI/SA**		05/10/06 10:50	06/24/06 13:25	06/20/06 14:46	RATA22595	1	1.00 Sa	
CID:000452LOT:J6E2503793 v4.8.24							FILTER				06/24/06 10:25	RATA22595 Alq	82%	0.250905 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 13:25	RA-226	18	34	ASC3HA	ASC		N	2.4113E+00	1.0000E+00	N	82%	N		2.0513E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(4.316E-02)	(0.000E+00)		7%			(0.000E+00)	3.985578		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**-0.38645**	**U4**	-2.06667E-01	-0.215246	-0.215246	1.00 Sa	82%		1.027017		
				(0.244327)		(1.2901E-01)	(0.135523)	(0.135523)	(0.028284)			0.463109		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	TE	FILTER	*STLE	Ra226WoBS	**H571M1AC**	**PCI/SA**		05/10/06 11:25	06/24/06 13:26	06/20/06 14:46	RATA22596	1	1.00 Sa	
CID:000453LOT:J6E2503794 v4.8.24							FILTER				06/24/06 10:26	RATA22596 Alq	92%	0.251134 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 13:26	RA-226	11	8	ASC4UA	ASC		N	2.1431E+00	1.0000E+00	N	92%	N		2.0510E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(1.080E-01)	(0.000E+00)		7%			(0.000E+00)	3.981931		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4 RADCALC v4.8.24
STL Richland

Batch Nbr: 6146445

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/27/2006 7:35:41 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**0.161828**	**U4**	8.66667E-02	0.090218	0.090218	1.00 Sa	92%		0.549576		
				(0.153002)		(8.1377E-02)	(0.08514)	(0.08514)	(0.028284)			0.224319		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	TE	FILTER	*STLE	Ra226WoBS	**H571N1AC**	**PCI/SA**		05/10/06 12:05	06/24/06 13:24	06/20/06 15:02	RATA22597	1	1.00 Sa	
CID:000454LOT:J6E2503795 v4.8.24							FILTER				06/24/06 10:24	RATA22597 Alq	86%	0.252419 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 13:24	RA-226	14	10	ASC7UA	ASC		N	2.2064E+00	1.0000E+00	N	86%	N		2.0557E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(1.072E-01)	(0.000E+00)		7%			(0.000E+00)	3.961672		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**0.218682**	**U4**	1.13333E-01	0.122537	0.122537	1.00 Sa	86%		0.622602		
				(0.178237)		(9.1530E-02)	(0.099626)	(0.099626)	(0.028284)			0.259164		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	TE	FILTER	*STLE	Ra226WoBS	**H571Q1AC**	**PCI/SA**		05/10/06 12:20	06/24/06 13:26	06/20/06 15:02	RATA22598	1	1.00 Sa	
CID:000455LOT:J6E2503796 v4.8.24							FILTER				06/24/06 10:26	RATA22598 Alq	91%	0.250257 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 13:26	RA-226	9	13	ASC8RD	ASC		N	1.6393E+00	1.0000E+00	N	91%	N		2.0552E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(4.623E-02)	(0.000E+00)		7%			(0.000E+00)	3.995891		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**-0.090912**	**U4**	-3.66667E-02	-0.050506	-0.050506	1.00 Sa	91%		0.893334		
				(0.210753)		(8.4918E-02)	(0.117047)	(0.117047)	(0.028284)			0.3797		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	TE	FILTER	*STLE	Ra226WoBS	**H571R1AC**	**PCI/SA**		05/10/06 12:25	06/24/06 13:25	06/20/06 15:02	RATA22599	1	1.00 Sa	
CID:000456LOT:J6E2503797 v4.8.24							FILTER				06/24/06 10:25	RATA22599 Alq	101%	0.248718 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 13:25	RA-226	19	14	ASC9RC	ASC		N	1.8288E+00	1.0000E+00	N	101%	N		2.0554E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(5.139E-02)	(0.000E+00)		8%			(0.000E+00)	4.020623		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**0.298563**	**U4**	1.46667E-01	0.164845	0.164845	1.00 Sa	101%		0.756971		
				(0.220327)		(1.0719E-01)	(0.121279)	(0.121279)	(0.028284)			0.323511		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	TE	FILTER	*STLE	Ra226WoBS	**H571T1AC**	**PCI/SA**		05/10/06 12:10	06/24/06 14:04	06/20/06 15:02	RATA22600	1	1.00 Sa	
CID:000457LOT:J6E2503798 v4.8.24							FILTER				06/24/06 11:04	RATA22600 Alq	99%	0.252112 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:8

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146445

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/27/2006 7:35:41 AM

1	06/24/06 14:04	RA-226	14	8	ASCDSA	ASC		N	1.8059E+00	1.0000E+00	N	99%	N	2.0453E+00	4.5045E-01	1.0000E+00
			50	60			Y		(3.449E-02)	(0.000E+00)		8%		(0.000E+00)	3.966484	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**0.300127**	**U4**	1.46667E-01	0.16797	0.16797	1.00 Sa	99%		0.602283		
				(0.183471)		(8.8443E-02)	(0.102228)	(0.102228)	(0.028284)			0.245832		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	TE	FILTER	*STLE	Ra226WoBS	**H571V1AC**	**PCI/SA**		05/10/06 10:10	06/24/06 14:02	06/20/06 15:22	RATA22601	1	1.00 Sa	
CID:P-0621LOT:J6E2503799 v4.8.24							FILTER				06/24/06 11:02	RATA22601 Alq	96%	0.252555 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 14:02	RA-226	27	26	ASCEHA	ASC		N	2.3636E+00	1.0000E+00	N	96%	N		2.0510E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(1.057E-01)	(0.000E+00)		8%			(0.000E+00)	3.959531		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**0.171598**	**U4**	1.06667E-01	0.096206	0.096206	1.00 Sa	96%		0.783599		
				(0.216763)		(1.3425E-01)	(0.121401)	(0.121401)	(0.028284)			0.34841		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	TE	FILTER	*STLE	Ra226WoBS	**H571X1AC**	**PCI/SA**		05/10/06 10:30	06/24/06 14:04	06/20/06 15:22	RATA22602	1	1.00 Sa	
CID:P-0622LOT:J6E25037910 v4.8.24							FILTER				06/24/06 11:04	RATA22602 Alq	87%	0.245067 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 14:04	RA-226	10	11	ASCGSA	ASC		N	2.1653E+00	1.0000E+00	N	87%	N		2.0505E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(7.622E-02)	(0.000E+00)		7%			(0.000E+00)	4.080516		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**0.033431**	**U4**	1.66667E-02	0.018187	0.018187	1.00 Sa	87%		0.673505		
				(0.168522)		(8.3997E-02)	(0.091674)	(0.091674)	(0.028284)			0.282562		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	TE	FILTER	*STLE	Ra226WoBS	**H57101AC**	**PCI/SA**		05/10/06 10:45	06/24/06 14:02	06/20/06 15:22	RATA22603	1	1.00 Sa	
CID:P-0623LOT:J6E25037911 v4.8.24							FILTER				06/24/06 11:02	RATA22603 Alq	94%	0.248628 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 14:02	RA-226	48	7	ASCJMB	ASC		N	2.5572E+00	1.0000E+00	N	94%	N		2.0510E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(6.981E-02)	(0.000E+00)		8%			(0.000E+00)	4.022073		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**1.300051**		8.43333E-01	0.717534	0.717534	1.00 Sa	94%		0.429813		
				(0.26058)		(1.4541E-01)	(0.137788)	(0.137788)	(0.028284)			0.173233		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:12

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146445

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/27/2006 7:35:41 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	TE	FILTER	*STLE	Ra226WoBS	**H57111AC**	**PCI/SA**		05/10/06 11:20	06/24/06 14:03	06/20/06 15:22	RATA22604	1	1.00 Sa	
CID:P-0624LOT:J6E25037912 v4.8.24							FILTER				06/24/06 11:03	RATA22604 Alq	80%	0.24997 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 14:03	RA-226	25	9	ASCKME	ASC		N	1.9262E+00	1.0000E+00	N	80%	N		2.0507E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(2.562E-02)	(0.000E+00)		6%			(0.000E+00)	4.000481		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**0.836398**		3.50000E-01	0.464123	0.464123	1.00 Sa	80%		0.738159		
				(0.279809)		(1.1180E-01)	(0.152962)	(0.152962)	(0.028284)			0.304499		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	TE	FILTER	*STLE	Ra226WoBS	**H57121AC**	**PCI/SA**		05/10/06 12:00	06/24/06 14:04	06/20/06 15:55	RATA22605	1	1.00 Sa	
CID:P-0625LOT:J6E25037913 v4.8.24							FILTER				06/24/06 11:04	RATA22605 Alq	78%	0.25105 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 14:04	RA-226	22	23	ASCBMB	ASC		N	2.4717E+00	1.0000E+00	N	78%	N		2.0591E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(2.991E-02)	(0.000E+00)		6%			(0.000E+00)	3.983274		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**0.109219**	**U4**	5.66667E-02	0.060868	0.060868	1.00 Sa	78%		0.889207		
				(0.237785)		(1.2324E-01)	(0.132473)	(0.132473)	(0.028284)			0.392604		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	TE	FILTER	*STLE	Ra226WoBS	**H57131AC**	**PCI/SA**		05/10/06 12:15	06/24/06 14:02	06/20/06 15:55	RATA22606	1	1.00 Sa	
CID:P-0626LOT:J6E25037914 v4.8.24							FILTER				06/24/06 11:02	RATA22606 Alq	96%	0.249877 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 14:02	RA-226	8	9	ASCHMA	ASC		N	2.4641E+00	1.0000E+00	N	96%	N		2.0596E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(1.254E-01)	(0.000E+00)		8%			(0.000E+00)	4.001974		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**0.015696**	**U4**	1.00000E-02	0.008707	0.008707	1.00 Sa	96%		0.484849		
				(0.118518)		(7.5498E-02)	(0.06574)	(0.06574)	(0.028284)			0.200006		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	TE	FILTER	*STLE	Ra226WoBS	**H57141AC**	**PCI/SA**		05/10/06 10:15	06/24/06 14:44	06/20/06 15:55	RATA22607	1	1.00 Sa	
CID:P-0627LOT:J6E25037915 v4.8.24							FILTER				06/24/06 11:44	RATA22607 Alq	90%	0.250121 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 14:44	RA-226	16	11	ASCLMC	ASC		N	2.4313E+00	1.0000E+00	N	90%	N		2.0487E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(1.218E-01)	(0.000E+00)		7%			(0.000E+00)	3.998066		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24

STL Richland

Batch Nbr: 6146445

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/27/2006 7:35:41 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/27/06	RA-226	R	**0.230569**	**U4**	1.36667E-01	0.128022	0.128022	1.00 Sa	90%		0.566477		
				(0.166019)		(9.7240E-02)	(0.091887)	(0.091887)	(0.028284)			0.237659		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
16	Calc	TE	FILTER	*STLE	Ra226WoBS	**H6A1V1AA**	**PCI/SA**	**B**	05/10/06 10:20	06/24/06 14:42	06/20/06 15:55	RATA22608	1	1.00 Sa	
CID:INTRA-LAB BLANKLOT:J6E260000445 v4.8.24							FILTER				06/24/06 11:42	RATA22608 Alq	86%	1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 14:42	RA-226	17	17	ASCNMA	ASC		N	2.4482E+00	1.0000E+00	N	86%	N		2.0492E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(6.292E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	RA-226	R	**0.02471**	**U4**	5.66667E-02	0.054854	0.054854	1.00 Sa	86%		0.176273		
				(0.046872)		(1.0734E-01)	(0.10401)	(0.10401)	(0.017321)			0.076364		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
17	Calc	TE	FILTER	*STLE	Ra226WoBS	**H6A1V1AC**	**PCI/SA**	**S**	05/10/06 10:20	06/24/06 14:44	06/20/06 15:55	RASC4119	1	1.00 Sa	
CID:INTRA-LAB CHECKLOT:J6E260000445 v4.8.24							FILTER				06/24/06 11:44	RASC4119 Alq	93%	1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/24/06 14:44	RA-226	179	8	ASCPMB	ASC		N	2.5237E+00	1.0000E+00	N	93%	N		2.0487E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(9.363E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	RA-226	R	**1.3607**		3.44667E+00	3.020609	3.020609	1.00 Sa	93%	96%	0.116196		
				(0.176318)		(2.7170E-01)	(0.357284)	(0.357284)	(0.017321)			0.047427		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:17

RADCALC v4.8.24

STL Richland

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H57091AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.1066
Technician: RS

Analysis Size: 0.2504 Analysis Unit: SA

Report Date: 24-JUN-2006 14:15:01.18
First Separation Date: 20-JUN-2006 14:46:00.00
Second Separation Date: 24-JUN-2006 10:25:00.00

Detector ID: 1 Cell ID: 1HB

Bkg Date: 23-JUN-2006 21:48:38.28
Bkg Counts: 000022 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 13:25:00.52
Counts: 000027 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H571F1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.1884
Technician: RS

Analysis Size: 0.249 Analysis Unit: SA

Report Date: 24-JUN-2006 14:14:02.79
First Separation Date: 20-JUN-2006 14:46:00.00
Second Separation Date: 24-JUN-2006 10:24:00.00

Detector ID: 2 Cell ID: 2RC

Bkg Date: 23-JUN-2006 21:48:49.79
Bkg Counts: 000008 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 13:24:02.47
Counts: 000008 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H571G1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.2243
Technician: RS

Analysis Size: 0.2509 Analysis Unit: SA

Report Date: 24-JUN-2006 14:15:00.94
First Separation Date: 20-JUN-2006 14:46:00.00
Second Separation Date: 24-JUN-2006 10:25:00.00

Detector ID: 3 Cell ID: 3HA

Bkg Date: 23-JUN-2006 21:48:59.73
Bkg Counts: 000034 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 13:25:00.43
Counts: 000018 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H571M1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.0877
Technician: RS

Analysis Size: 0.2511 Analysis Unit: SA

Report Date: 24-JUN-2006 14:16:00.81
First Separation Date: 20-JUN-2006 14:46:00.00
Second Separation Date: 24-JUN-2006 10:26:00.00

Detector ID: 4 Cell ID: 4UA

Bkg Date: 23-JUN-2006 21:49:11.61
Bkg Counts: 000008 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 13:26:00.33
Counts: 000011 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H571N1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.1605
Technician: RS

Analysis Size: 0.2524 Analysis Unit: SA

Report Date: 24-JUN-2006 14:14:00.78
First Separation Date: 20-JUN-2006 15:02:00.00
Second Separation Date: 24-JUN-2006 10:24:00.00

Detector ID: 7 Cell ID: 7UA

Bkg Date: 23-JUN-2006 21:49:18.98
Bkg Counts: 000010 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 13:24:00.44
Counts: 000014 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H571Q1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.0987
Technician: RS

Analysis Size: 0.2503 Analysis Unit: SA

Report Date: 24-JUN-2006 14:16:00.89
First Separation Date: 20-JUN-2006 15:02:00.00
Second Separation Date: 24-JUN-2006 10:26:00.00

Detector ID: 8 Cell ID: 8RD

Bkg Date: 23-JUN-2006 21:49:31.51
Bkg Counts: 000013 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 13:26:00.38
Counts: 000009 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H571R1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 0.9921
Technician: RS

Analysis Size: 0.2487 Analysis Unit: SA

Report Date: 24-JUN-2006 14:15:01.03
First Separation Date: 20-JUN-2006 15:02:00.00
Second Separation Date: 24-JUN-2006 10:25:00.00

Detector ID: 9 Cell ID: 9RC

Bkg Date: 23-JUN-2006 21:49:46.76
Bkg Counts: 000014 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 13:25:00.48
Counts: 000019 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H571T1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.0112
Technician: RS

Analysis Size: 0.2521 Analysis Unit: SA

Report Date: 24-JUN-2006 14:54:01.30
First Separation Date: 20-JUN-2006 15:02:00.00
Second Separation Date: 24-JUN-2006 11:04:00.00

Detector ID: 13 Cell ID: DSA

Bkg Date: 23-JUN-2006 21:50:21.73
Bkg Counts: 000008 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 14:04:00.55
Counts: 000014 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H571V1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.0394
Technician: RS

Analysis Size: 0.2526 Analysis Unit: SA

Report Date: 24-JUN-2006 14:52:00.94
First Separation Date: 20-JUN-2006 15:22:00.00
Second Separation Date: 24-JUN-2006 11:02:00.00

Detector ID: 14 Cell ID: EHA

Bkg Date: 23-JUN-2006 21:50:31.83
Bkg Counts: 000026 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 14:02:00.42
Counts: 000027 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H571X1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.1523
Technician: RS

Analysis Size: 0.2451 Analysis Unit: SA

Report Date: 24-JUN-2006 14:54:01.14
First Separation Date: 20-JUN-2006 15:22:00.00
Second Separation Date: 24-JUN-2006 11:04:00.00

Detector ID: 16 Cell ID: GSA

Bkg Date: 23-JUN-2006 21:50:52.00
Bkg Counts: 000011 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 14:04:00.51
Counts: 000010 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H57101AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.0608
Technician: RS

Analysis Size: 0.2486 Analysis Unit: SA

Report Date: 24-JUN-2006 14:52:01.01
First Separation Date: 20-JUN-2006 15:22:00.00
Second Separation Date: 24-JUN-2006 11:02:00.00

Detector ID: 18 Cell ID: JMB

Bkg Date: 23-JUN-2006 21:51:07.83
Bkg Counts: 000007 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 14:02:00.48
Counts: 000048 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H57111AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.2455
Technician: RS

Analysis Size: 0.25 Analysis Unit: SA

Report Date: 24-JUN-2006 14:53:00.58
First Separation Date: 20-JUN-2006 15:22:00.00
Second Separation Date: 24-JUN-2006 11:03:00.00

Detector ID: 19 Cell ID: KME

Bkg Date: 23-JUN-2006 21:51:17.20
Bkg Counts: 000009 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 14:03:00.27
Counts: 000025 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H57121AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.2894
Technician: RS

Analysis Size: 0.251 Analysis Unit: SA

Report Date: 24-JUN-2006 14:54:01.01
First Separation Date: 20-JUN-2006 15:55:00.00
Second Separation Date: 24-JUN-2006 11:04:00.00

Detector ID: 11 Cell ID: BMB

Bkg Date: 23-JUN-2006 21:49:58.84
Bkg Counts: 000023 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 14:04:00.46
Counts: 000022 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H57131AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.0417
Technician: RS

Analysis Size: 0.2499 Analysis Unit: SA

Report Date: 24-JUN-2006 14:52:02.93
First Separation Date: 20-JUN-2006 15:55:00.00
Second Separation Date: 24-JUN-2006 11:02:00.00

Detector ID: 17 Cell ID: HMA

Bkg Date: 23-JUN-2006 21:50:59.10
Bkg Counts: 000009 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 14:02:02.52
Counts: 000008 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H57141AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.1117
Technician: RS

Analysis Size: 0.2501 Analysis Unit: SA

Report Date: 24-JUN-2006 15:34:00.78
First Separation Date: 20-JUN-2006 15:55:00.00
Second Separation Date: 24-JUN-2006 11:44:00.00

Detector ID: 20 Cell ID: LMC

Bkg Date: 23-JUN-2006 21:51:31.11
Bkg Counts: 000011 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 14:44:00.28
Counts: 000016 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H6A1V1AA Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.1565
Technician: RS

Analysis Size: 1.0 Analysis Unit: SA

Report Date: 24-JUN-2006 15:32:00.70
First Separation Date: 20-JUN-2006 15:55:00.00
Second Separation Date: 24-JUN-2006 11:42:00.00

Detector ID: 22 Cell ID: NMA

Bkg Date: 23-JUN-2006 21:51:50.62
Bkg Counts: 000017 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 14:42:00.30
Counts: 000017 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H6A1V1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6146445 Activity Unit: PCI/SA Multiplier: 1.0796
Technician: RS

Analysis Size: 1.0 Analysis Unit: SA

Report Date: 24-JUN-2006 15:34:00.84
First Separation Date: 20-JUN-2006 15:55:00.00
Second Separation Date: 24-JUN-2006 11:44:00.00

Detector ID: 23 Cell ID: PMB

Bkg Date: 23-JUN-2006 21:52:04.45
Bkg Counts: 000008 Bkg Duration: 000060.0

Count Date: 24-JUN-2006 14:44:00.33
Counts: 000179 Count Duration: 000050.0

End of Report

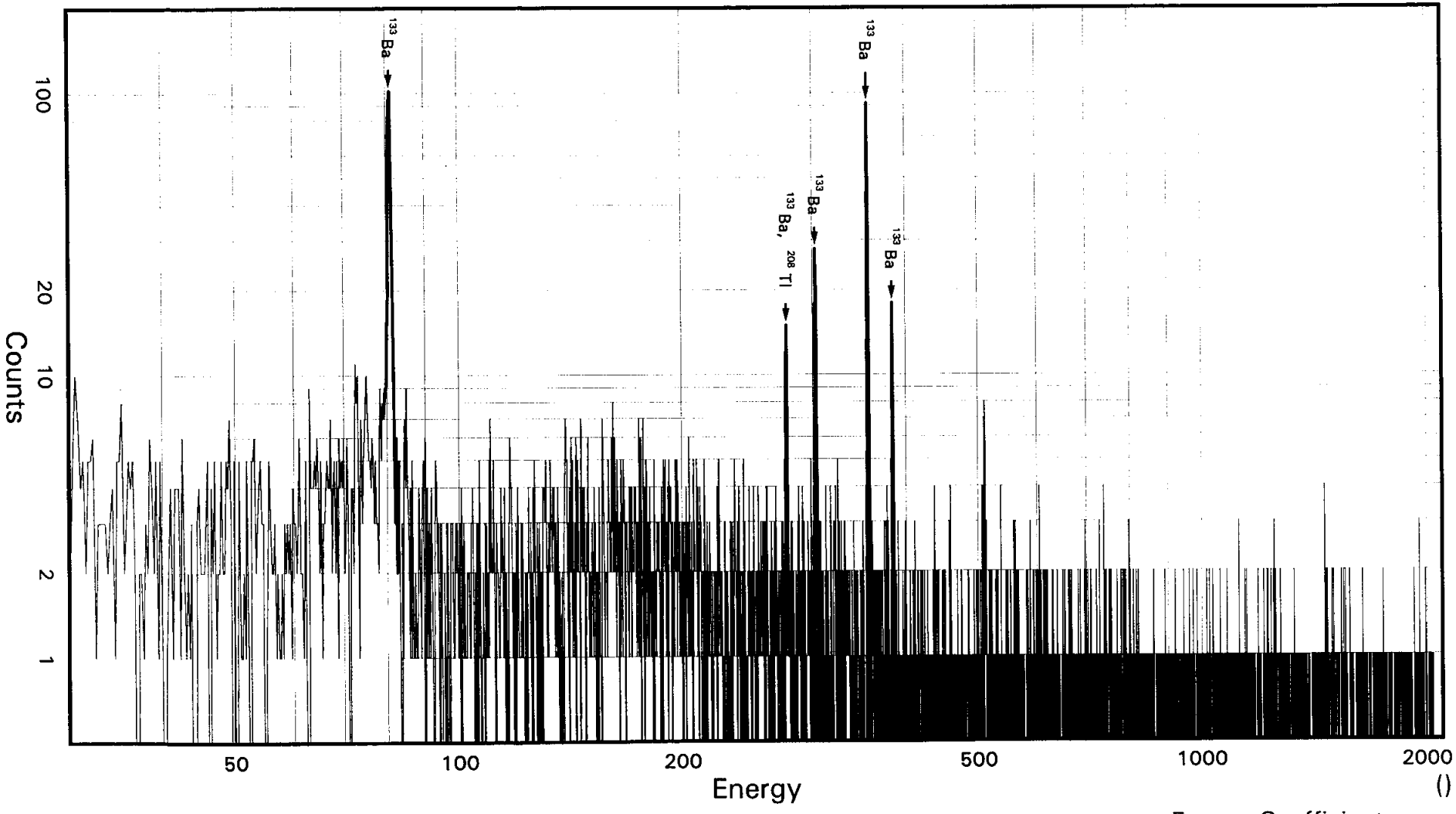
STL Richland WA.

BA13

Sample ID: H57091AC

Detector ID: GER12 1

Batch ID: 6146445



Acquisition Start: 19-JUN-2006 13:17:02.33

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: 1.25233E+01

Slope: 2.47509E-01

Quadrature: -2.00961E-09

SAMPLE IDENTIFICATION: H57091AC

CONFIGURATION ID: GER12:H57091AC_190661317
TITLE : BA13
SAMPLE ID : H57091AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 13:17:02
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:53.77
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.2523E+01 keV
ENERGY SLOPE: 2.4751E-01 keV/C
ENERGY Q COEFF: -.2010E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0884E-01 keV
FWHM SLOPE: 3.5936E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 2.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 13:47:33

```
Configuration     : $DISK1:[GER12.SAMPLE]H57091AC_190661317.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA13
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 13:17:02
Sample ID         : H57091AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.33   0.0%
Start energy      :    12.77             End energy       :  2039.98
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.95	326	89	0.77	276.45	269	16	1.81E-01	8.6	
2	0	276.72	38	29	0.99	1067.42	1060	13	2.12E-02	33.4	
3	0	302.81	115	7	1.15	1172.85	1165	15	6.38E-02	10.7	
4	0	356.03	395	9	0.97	1387.87	1378	17	2.19E-01	5.3	
5	0	383.80	68	7	0.88	1500.07	1492	14	3.78E-02	14.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 13:47:33

Configuration : $DISK1:[GER12.SAMPLE]H57091AC_190661317.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA13
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 13:17:02
Sample ID : H57091AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.33 0.0%
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	326	33.00	2.899E+00	1.137E+03	1.138E+03	10.16
	276.40	38	6.90	3.105E+00	5.927E+02	5.934E+02	33.85
	302.84	115	17.80	3.109E+00	6.921E+02	6.929E+02	11.95
	356.00	395	62.05*	3.111E+00	6.812E+02	6.819E+02	7.56
	383.85	68	8.70	3.111E+00	8.375E+02	8.385E+02	15.63

Flag: "*" = Keyline

None

Flags: "T" = Tentatively associated

Sample ID : H57091AC Acquisition date : 19-JUN-2006 13:17:02

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	6.015E+02	33.85	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 13:47:35

Configuration	: $DISK1:[GER12.SAMPLE]H57091AC_190661317.CNF;1		
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8		
Analyses by	: MINACT V2.8		
Sample title	: BA13		
Sample date	: 13-JUN-2006 12:00:00	Acquisition date	: 19-JUN-2006 13:17:02
Sample ID	: H57091AC	Sample quantity	: 1.0000 SAMPL
Sample type	:	Sample geometry	: BA133T15
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.33 0.0%
Peak Width (FWHM)	: 3.00	Confidence level	: 5.00 %
Energy tolerance	: 2.00	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 5.00 %
Efficiency type	: Empirical	Efficiencies at	: Peak Energy
Abundance limit	: 80.00	WTM error limit	: 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.819E+02	5.158E+01	3.278E+01	6.557E-01	20.800

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-3.997E+01		4.374E+01	1.542E+02	3.093E+00	-0.259
NA-22	1.020E+00		3.443E+00	1.486E+01	3.133E-01	0.069
K-40	6.696E+01		5.225E+01	2.626E+02	5.599E+00	0.255
SC-46	8.212E-01		4.119E+00	1.717E+01	3.583E-01	0.048
CR-51	1.658E+02		7.787E+01	3.278E+02	6.559E+00	0.506
MN-54	1.197E+00		2.910E+00	1.334E+01	2.732E-01	0.090
CO-57	-8.791E+01		6.704E+01	2.240E+02	4.614E+00	-0.393
CO-58	1.416E+00		3.821E+00	1.651E+01	3.375E-01	0.086
FE-59	-1.046E+01		5.623E+00	1.596E+01	3.325E-01	-0.655
CO-60	-2.466E+00		2.865E+00	1.054E+01	2.229E-01	-0.234
ZN-65	-6.330E+00		7.320E+00	2.688E+01	5.607E-01	-0.235
SE-75	1.289E+00		1.130E+01	4.250E+01	8.524E-01	0.030
SR-85	-2.546E+01		8.464E+00	2.325E+01	4.670E-01	-1.095
Y-88	3.688E+00		2.733E+00	1.468E+01	3.201E-01	0.251
NB-94	-5.682E-01		2.982E+00	1.245E+01	2.556E-01	-0.046
NB-95	2.715E-01		3.393E+00	1.480E+01	3.017E-01	0.018
TC-95M	1.854E+01		1.152E+01	4.732E+01	9.560E-01	0.392
ZR-95	1.935E+00		6.541E+00	2.794E+01	5.690E-01	0.069
ZRNB-95	5.141E-01		6.426E+00	2.803E+01	5.713E-01	0.018
MO-99	1.229E+01		4.356E+01	1.668E+02	3.431E+00	0.074
RH-101	-7.935E-01		1.080E+01	4.125E+01	8.343E-01	-0.019
RH-102M	6.666E+00		4.302E+00	1.976E+01	3.963E-01	0.337
RU-103	-4.801E+00		6.335E+00	2.239E+01	4.493E-01	-0.214
RU-106DA	-4.353E+01		4.155E+01	1.463E+02	2.956E+00	-0.297
AG-108M	-8.513E+00		6.214E+00	2.069E+01	4.142E-01	-0.412
AG-110M	3.044E-02		4.349E+00	1.850E+01	3.800E-01	0.002
SN-113DA	-4.235E+00		6.575E+00	2.455E+01	4.911E-01	-0.173

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-5.205E+00		5.649E+00	1.999E+01	4.035E-01	-0.260
SB-125	2.578E+00		1.081E+01	4.691E+01	9.393E-01	0.055
SN-126DA	6.415E+00		4.888E+00	2.113E+01	4.280E-01	0.304
I-131	1.947E+00		1.068E+01	4.224E+01	8.447E-01	0.046
CS-134	6.603E+00		4.239E+00	2.042E+01	4.171E-01	0.323
CS-137DA	1.533E+00		5.006E+00	2.050E+01	4.151E-01	0.075
LA-138	1.679E-01		4.778E+00	2.052E+01	4.370E-01	0.008
CE-139	3.626E+00		1.077E+01	3.950E+01	8.050E-01	0.092
BA-140	1.217E+01		2.158E+01	9.330E+01	1.876E+00	0.130
BALA-140	-6.811E+00		4.831E+00	9.058E+00	1.948E-01	-0.752
LA-140	-3.012E+01		2.136E+01	4.004E+01	8.611E-01	-0.752
CE-141	2.134E+01		1.968E+01	7.578E+01	1.555E+00	0.282
CE-144	6.361E+01		7.781E+01	2.973E+02	6.134E+00	0.214
CEPR-144	1.289E+02		1.557E+02	5.954E+02	1.228E+01	0.216
PM-144	5.612E+00		4.542E+00	2.002E+01	4.043E-01	0.280
PM-146	-9.626E+00		6.778E+00	2.225E+01	4.459E-01	-0.433
EU-152	1.507E+01		1.887E+01	7.888E+01	1.578E+00	0.191
EU-154	6.252E+00		9.121E+00	4.184E+01	8.819E-01	0.149
EU-155	1.291E+01		2.973E+01	1.175E+02	2.465E+00	0.110
HF-181	-9.356E+00		5.088E+00	1.503E+01	3.015E-01	-0.622
BI-207	-1.762E+00		3.758E+00	1.461E+01	2.943E-01	-0.121
TL-208	6.765E-01		5.388E+00	2.158E+01	4.351E-01	0.031
BI-210M	5.963E+00		1.343E+01	5.145E+01	1.032E+00	0.116
BI-212	3.020E+01		5.330E+01	2.333E+02	7.125E+00	0.129
PB-212	6.968E+00		1.360E+01	5.348E+01	1.075E+00	0.130
BI-214	-6.536E+00		1.008E+01	3.703E+01	7.475E-01	-0.177
PB-214	-1.695E+01		1.427E+01	3.947E+01	7.895E-01	-0.430
RA-223	-7.084E+01		4.456E+01	1.444E+02	2.895E+00	-0.491
RA-224DA	7.010E+00		1.368E+01	5.381E+01	1.082E+00	0.130
RA-226DA	-6.537E+00		1.008E+01	3.703E+01	7.475E-01	-0.177
AC-227DA	4.975E+01		6.273E+01	2.451E+02	4.928E+00	0.203
AC-228	-6.833E-02		9.775E+00	4.280E+01	8.808E-01	-0.002
RA-228DA	-6.847E-02		9.795E+00	4.289E+01	8.825E-01	-0.002
TH-228DA	1.894E+00		1.509E+01	6.044E+01	1.218E+00	0.031
TH-232DA	-7.944E+00		4.217E+01	1.564E+02	3.129E+00	-0.051
TH-234DA	-3.492E+01		5.506E+02	2.235E+03	4.626E+01	-0.016
U-234DA	1.536E+01		3.377E+01	1.293E+02	2.589E+00	0.119
U-235HP	1.495E+01		7.758E+01	2.856E+02	5.865E+00	0.052
NP-237DA	3.272E+01		1.533E+01	6.739E+01	1.349E+00	0.486
U-238DA	-1.695E+01		1.427E+01	3.947E+01	7.895E-01	-0.430
U-238DHP	2.191E+02		2.385E+02	9.044E+02	1.991E+01	0.242
AM-241HP	2.785E+00		2.175E+01	8.048E+01	1.784E+00	0.035

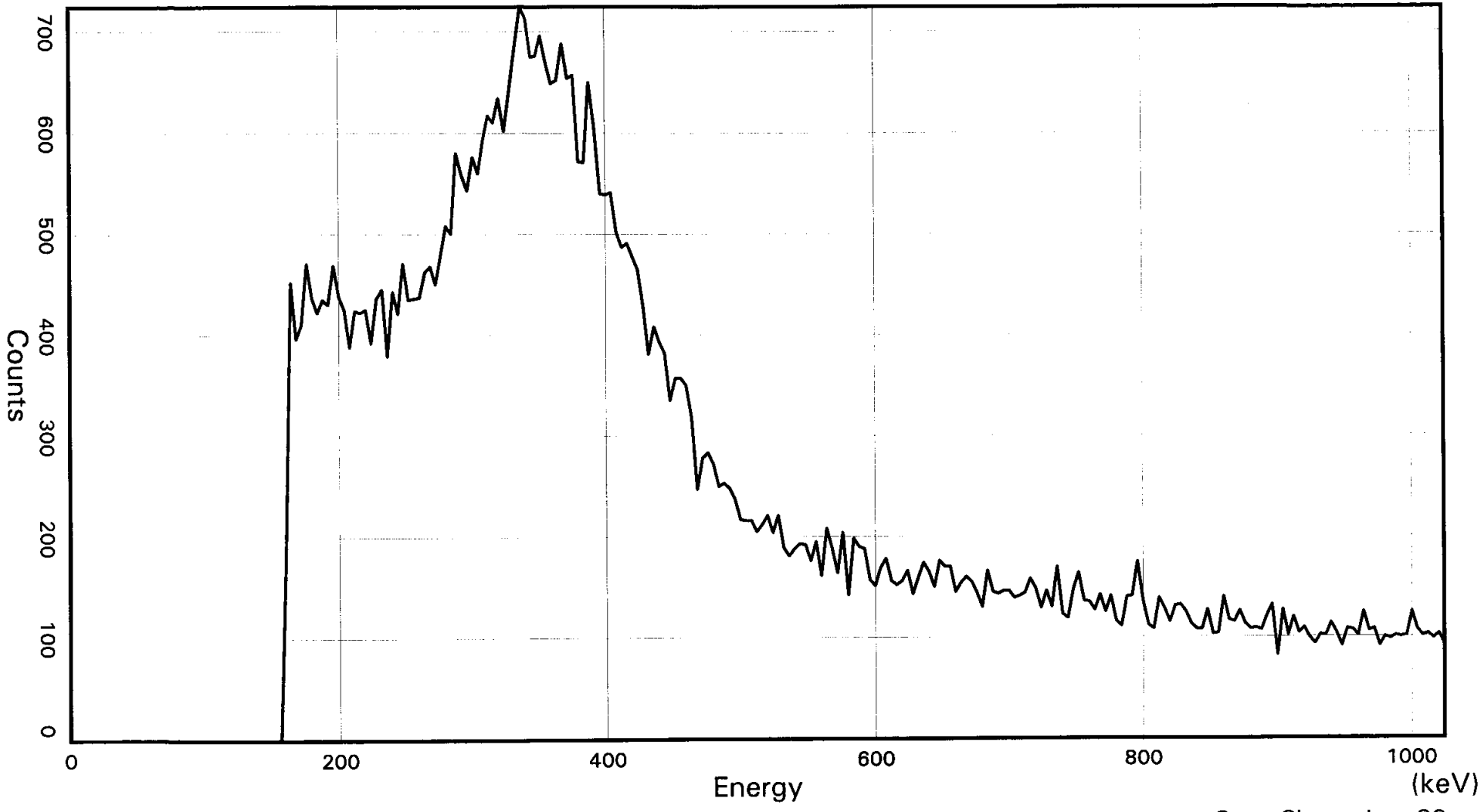
STL Richland WA.

BA133

Sample ID: H571F1AC

Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start:	19-JUN-2006 13:50:34.31
Preset Live Time:	0 00:30:00
Elapsed Live Time:	0 00:30:00
Weighting:	DERIVED

Start Channel:	80
End Channel:	113
Iterations:	5
Gain shift:	Iter

SAMPLE IDENTIFICATION: H571F1AC

CONFIGURATION ID: NAI1:H571F1AC_190661350
TITLE : BA133
SAMPLE ID : H571F1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 13:50:34
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 17-NOV-1993 10:39:59.60
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY:

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 0.0000E+00 keV
ENERGY SLOPE: 4.0000E+00 keV/C
ENERGY Q COEFF: 0.0000E+00 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: -.2302E+02 keV
FWHM SLOPE: 5.7163E+00 sqr keV
ITERATIONS: 5
GAUSSIAN SENSITIVITY: 35.00 %

ABUNDANCE LIMIT: 75.00 %
ENERGY TOLERANCE: 20.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]BA133.NLB

VMS NAI Report V1.2 Generated 19-JUN-2006 14:20:39

```
Configuration     : RDND06$DKA100:[NAI1.SAMPLE]H571F1AC_190661350.CNF;1
Analyses by       : NAI V3.0
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 13:50:34
Sample ID         : H571F1AC             Sample quantity  : 1.0000 sampl
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.64   0.0%
Sample Multiplier:     1.00              Rejection Coeff. :     0.00
Gain shift type   : ITER                 Threshold Shift  : No
Weighting type    : DERIVED              Calculated counts: No
Iterations        :  5
```

NAI Residuals Report

Ratio of Residuals Over Standard Deviation Per Channel

80:	5.5	3.1	4.0	5.0	6.5	5.0	3.3	1.9
88:	1.6	0.8	-0.5	-0.3	2.4	-1.0	0.9	-2.2
96:	-2.6	-0.4	-1.0	-3.0	-3.5	-1.4	-4.0	-4.4
104:	-4.2	-3.6	-3.3	-4.1	-5.7	-4.1	-4.3	-4.5
112:	-5.1	-3.8						

List of Suspicious Channels

81	82	83	84	85

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	1.37E+01	0.00E+00	1.01E+00
2	8.23E+00	0.00E+00	1.03E+00
3	4.30E+00	0.00E+00	1.05E+00
4	1.34E+00	0.00E+00	1.07E+00
5	4.17E-01	0.00E+00	1.08E+00

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	635.	5.69

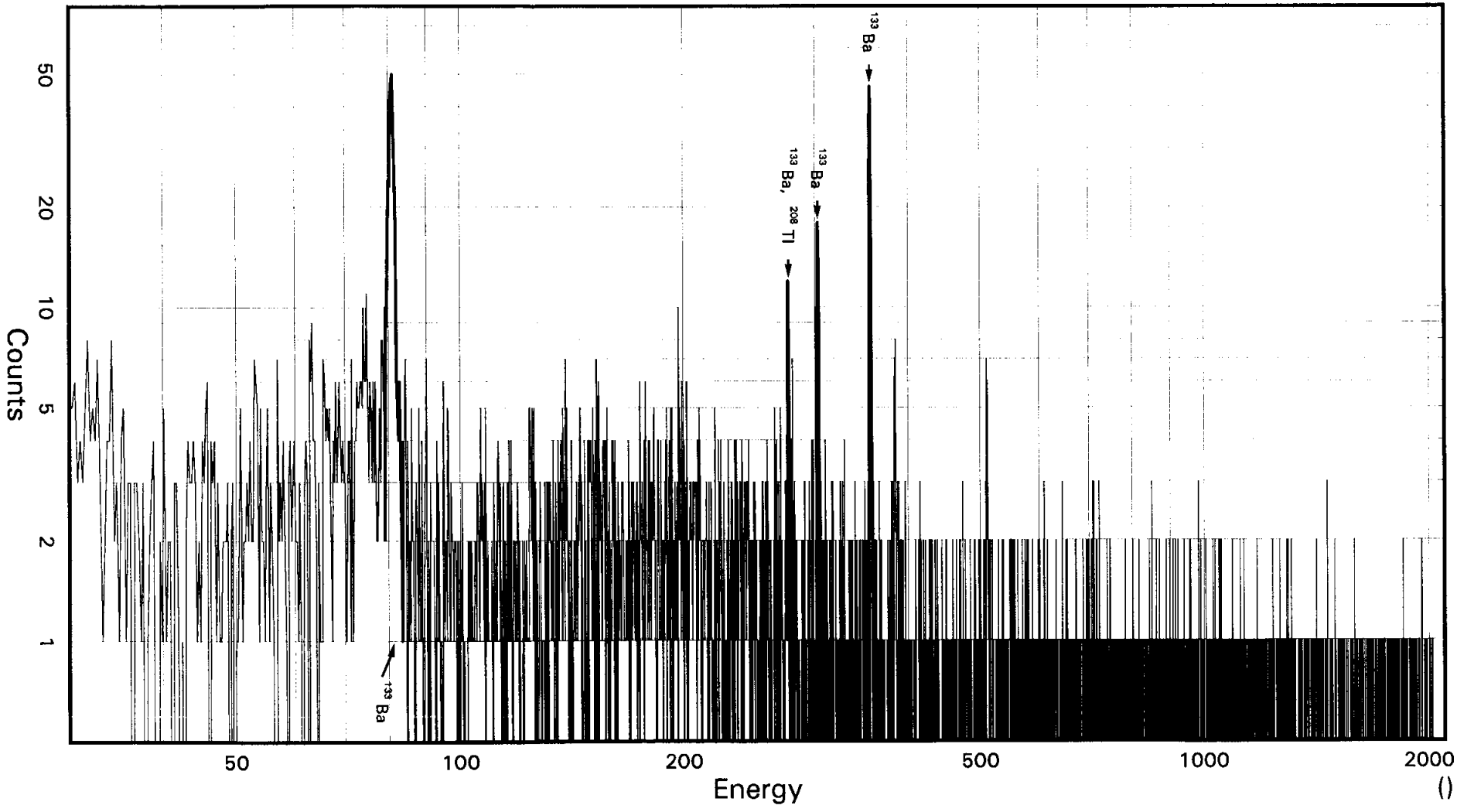
Total Activity :	635.	

STL Richland WA.

BA133

Sample ID: H571G1AC
Detector ID: GER10 1

Batch ID: 6146445



Acquisition Start: 19-JUN-2006 13:51:37.58
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.56759E+01
Slope: 2.46944E-01
Quadrature: 3.15282E-09

SAMPLE IDENTIFICATION: H571G1AC

CONFIGURATION ID: GER10:H571G1AC_190661351
TITLE : BA133
SAMPLE ID : H571G1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 13:51:37
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:08.65
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.5676E+01 keV
ENERGY SLOPE: 2.4694E-01 keV/C
ENERGY Q COEFF: 3.1528E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.9758E-01 keV
FWHM SLOPE: 2.6348E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 14:21:57

```
Configuration     : $DISK1:[GER10.SAMPLE]H571G1AC_190661351.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 13:51:37
Sample ID         : H571G1AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.21   0.0%
Start energy      :    18.15             End energy       :  2038.85
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.96	278	55	1.17	264.36	257	19	1.54E-01	8.8	
2	0	276.91	35	35	0.87	1057.84	1047	20	1.93E-02	45.1	
3	0	302.89	109	4	1.65	1163.05	1155	17	6.03E-02	10.5	
4	0	356.04	293	12	1.53	1378.29	1368	22	1.63E-01	6.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 14:21:57

Configuration : $DISK1:[GER10.SAMPLE]H571G1AC_190661351.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 13:51:37
Sample ID : H571G1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.21 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	278	33.00	2.399E+00	1.171E+03	1.172E+03	10.38
	276.40	35	6.90	2.578E+00	6.501E+02	6.508E+02	45.43
	302.84	109	17.80	2.582E+00	7.875E+02	7.883E+02	11.84
	356.00	293	62.05*	2.584E+00	6.100E+02	6.107E+02	8.45
	383.85	------	8.70	2.584E+00	------	Line Not Found	------

Flag: "*" = Keyline

None

Flags: "T" = Tentatively associated

Sample ID : H571G1AC
Acquisition date : 19-JUN-2006 13:51:37

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	6.597E+02	45.43	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 14:21:59

Configuration : $DISK1:[GER10.SAMPLE]H571G1AC_190661351.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 13:51:37
Sample ID : H571G1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.21 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.107E+02	5.162E+01	4.420E+01	8.839E-01	13.817

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	2.590E+01		4.626E+01	2.004E+02	4.020E+00	0.129
NA-22	-1.453E+00		3.657E+00	1.474E+01	3.115E-01	-0.099
K-40	4.948E+01		4.394E+01	2.345E+02	5.017E+00	0.211
SC-46	-2.629E+00		3.460E+00	1.334E+01	2.790E-01	-0.197
CR-51	-1.399E+02		7.646E+01	2.357E+02	4.717E+00	-0.593
MN-54	-1.392E+00		4.039E+00	1.609E+01	3.298E-01	-0.086
CO-57	4.900E+00		1.075E+02	3.848E+02	7.939E+00	0.013
CO-58	-4.236E+00		4.237E+00	1.516E+01	3.103E-01	-0.279
FE-59	-5.010E+00		6.330E+00	2.431E+01	5.076E-01	-0.206
CO-60	-4.225E+00		2.450E+00	3.707E+00	7.865E-02	-1.140
ZN-65	1.091E+01		7.633E+00	3.809E+01	7.963E-01	0.286
SE-75	1.627E+01		1.550E+01	6.061E+01	1.216E+00	0.268
SR-85	-3.922E+01		1.144E+01	3.145E+01	6.319E-01	-1.247
Y-88	2.959E+00		2.099E+00	1.373E+01	3.008E-01	0.216
NB-94	4.627E+00		4.541E+00	2.053E+01	4.219E-01	0.225
NB-95	-1.545E+00		3.884E+00	1.582E+01	3.228E-01	-0.098
TC-95M	-6.465E+00		1.631E+01	5.842E+01	1.181E+00	-0.111
ZR-95	1.107E-01		6.177E+00	2.732E+01	5.571E-01	0.004
ZRNB-95	-3.268E+00		7.288E+00	2.948E+01	6.015E-01	-0.111
MO-99	-8.794E+00		5.309E+01	1.888E+02	3.889E+00	-0.047
RH-101	1.168E+01		1.548E+01	6.066E+01	1.227E+00	0.193
RH-102M	6.321E-02		5.099E+00	2.051E+01	4.115E-01	0.003
RU-103	-4.402E-02		7.943E+00	3.047E+01	6.116E-01	-0.001
RU-106DA	-5.203E+01		4.922E+01	1.695E+02	3.426E+00	-0.307
AG-108M	-5.919E+00		6.587E+00	2.345E+01	4.696E-01	-0.252
AG-110M	-5.773E+00		5.002E+00	1.725E+01	3.547E-01	-0.335
SN-113DA	7.146E+00		1.013E+01	4.146E+01	8.295E-01	0.172

---- Non-Identified Nuclides ----

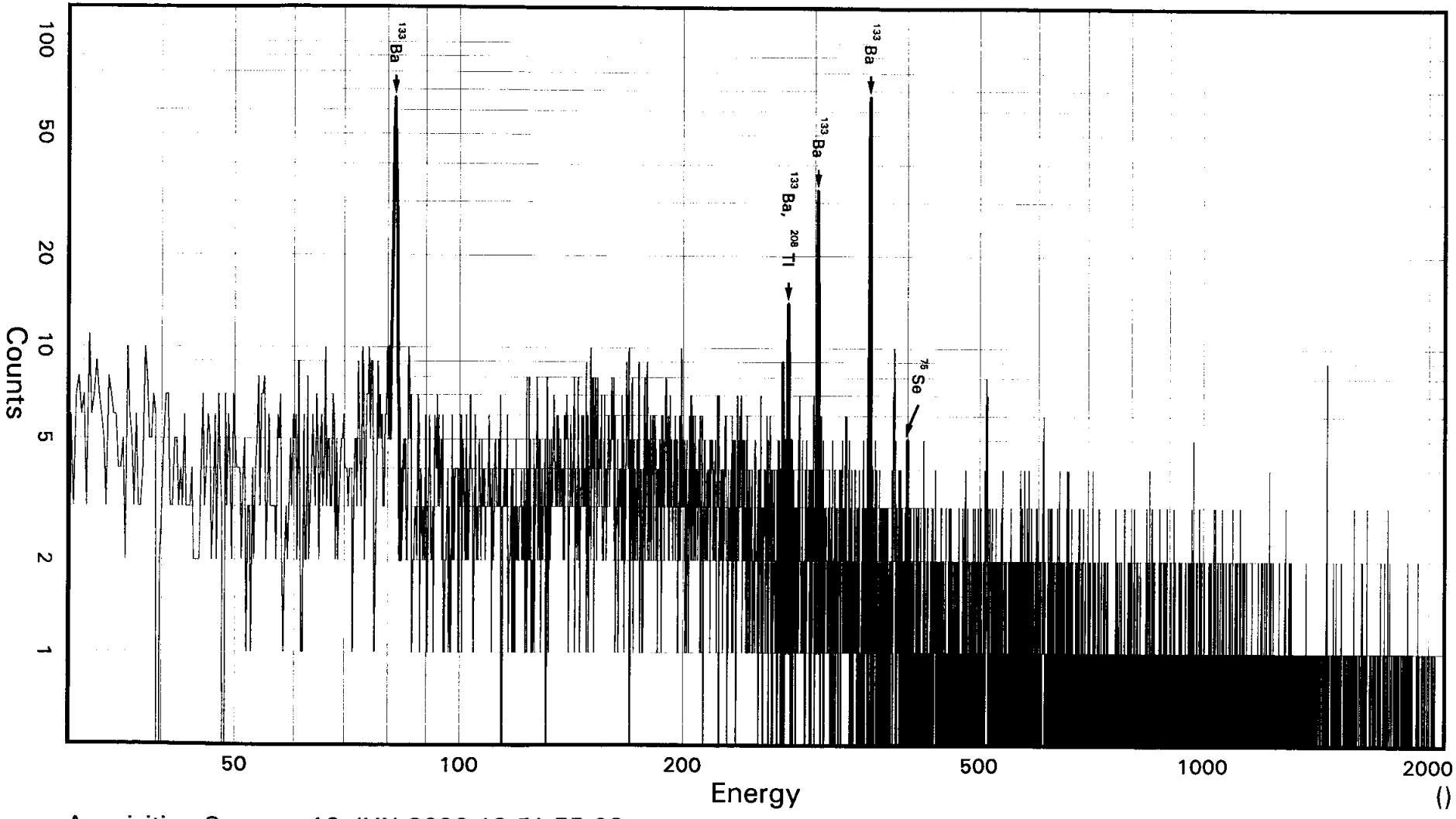
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-2.432E+00		6.317E+00	2.345E+01	4.735E-01	-0.104
SB-125	4.062E+01		2.202E+01	9.666E+01	1.935E+00	0.420
SN-126DA	1.634E-01		3.138E+00	1.407E+01	2.852E-01	0.012
I-131	3.537E+00		1.397E+01	5.489E+01	1.098E+00	0.064
CS-134	-8.188E-02		4.366E+00	1.852E+01	3.786E-01	-0.004
CS-137DA	4.741E+00		4.024E+00	2.013E+01	4.078E-01	0.236
LA-138	-5.865E+00		4.482E+00	1.519E+01	3.245E-01	-0.386
CE-139	7.182E+00		1.125E+01	4.376E+01	8.927E-01	0.164
BA-140	-1.155E+00		3.090E+01	1.202E+02	2.418E+00	-0.010
BALA-140	-1.764E+00		7.576E+00	3.436E+01	7.418E-01	-0.051
LA-140	-3.548E+01		3.588E+01	1.330E+02	2.871E+00	-0.267
CE-141	3.015E+01		2.182E+01	8.605E+01	1.768E+00	0.350
CE-144	-4.366E+01		9.391E+01	3.292E+02	6.803E+00	-0.133
CEPR-144	-8.631E+01		1.879E+02	6.589E+02	1.361E+01	-0.131
PM-144	-1.713E+00		4.530E+00	1.743E+01	3.522E-01	-0.098
PM-146	-9.643E+00		7.645E+00	2.607E+01	5.224E-01	-0.370
EU-152	-7.064E-01		2.576E+01	9.654E+01	1.931E+00	-0.007
EU-154	-4.076E+00		1.026E+01	4.136E+01	8.741E-01	-0.099
EU-155	4.899E+01		4.760E+01	1.844E+02	3.878E+00	0.266
HF-181	-7.186E-02		6.432E+00	2.580E+01	5.176E-01	-0.003
BI-207	1.089E+00		4.865E+00	1.996E+01	4.023E-01	0.055
TL-208	-5.069E+00		5.698E+00	2.024E+01	4.081E-01	-0.250
BI-210M	1.385E+01		1.865E+01	7.126E+01	1.429E+00	0.194
BI-212	-1.671E+01		7.103E+01	2.811E+02	8.590E+00	-0.059
PB-212	-8.367E+00		2.143E+01	7.661E+01	1.541E+00	-0.109
BI-214	9.541E+00		1.274E+01	5.245E+01	1.059E+00	0.182
PB-214	-2.751E+00		2.111E+01	6.606E+01	1.321E+00	-0.042
RA-223	8.554E+01		6.292E+01	2.520E+02	5.054E+00	0.339
RA-224DA	-8.418E+00		2.156E+01	7.708E+01	1.550E+00	-0.109
RA-226DA	9.655E+00		1.276E+01	5.253E+01	1.061E+00	0.184
AC-227DA	1.173E+02		8.085E+01	3.226E+02	6.489E+00	0.364
AC-228	-2.482E+01		1.634E+01	5.196E+01	1.071E+00	-0.478
RA-228DA	-2.487E+01		1.637E+01	5.207E+01	1.073E+00	-0.478
TH-228DA	-1.420E+01		1.596E+01	5.667E+01	1.143E+00	-0.251
TH-232DA	-4.485E+00		5.241E+01	1.968E+02	3.937E+00	-0.023
TH-234DA	-7.688E+02		5.645E+02	1.909E+03	3.960E+01	-0.403
U-234DA	3.839E+00		4.029E+01	1.509E+02	3.021E+00	0.025
U-235HP	1.627E+02		9.134E+01	3.656E+02	7.518E+00	0.445
NP-237DA	-2.784E+01		1.904E+01	6.196E+01	1.240E+00	-0.449
U-238DA	-2.751E+00		2.111E+01	6.606E+01	1.321E+00	-0.042
U-238DHP	3.027E+02		3.473E+02	1.305E+03	2.887E+01	0.232
AM-241HP	-9.717E+00		3.131E+01	1.129E+02	2.517E+00	-0.086

STL Richland WA.

BA133

Sample ID: H571M1AC
Detector ID: GER13 1

Batch ID: 6146445



Acquisition Start: 19-JUN-2006 13:51:55.08
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -6.10701E-01
Slope: 2.50772E-01
Quadrature: -1.04651E-07

SAMPLE IDENTIFICATION: H571M1AC

CONFIGURATION ID: GER13:H571M1AC_190661351
TITLE : BA133
SAMPLE ID : H571M1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 13:51:55
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:44:45.22
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.6107E+00 keV
ENERGY SLOPE: 2.5077E-01 keV/C
ENERGY Q COEFF: -.1047E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.1661E-01 keV
FWHM SLOPE: 4.3284E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 14:22:14

Configuration	: $DISK1:[GER13.SAMPLE]H571M1AC_190661351.CNF;1		
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6		
Sample title	: BA133		
Sample date	: 13-JUN-2006 12:00:00	Acquisition date	: 19-JUN-2006 13:51:55
Sample ID	: H571M1AC	Sample quantity	: 1.0000 SAMPL
Sample type	:	Sample geometry	: BA133T15
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.36 0.0%
Start energy	: 19.45	End energy	: 2046.69
Sensitivity	: 5.00	Gaussian	: 10.00
Critical level	: No		

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.98	184	104	0.77	329.40	322	17	1.02E-01	14.9	
2	0	275.98	93	52	5.35	1103.47	1078	41	5.16E-02	27.9	
3	0	286.01	22	21	1.66	1143.49	1137	16	1.25E-02	49.4	
4	0	302.70	141	23	0.89	1210.12	1201	19	7.81E-02	11.8	
5	0	355.79	375	9	1.30	1422.05	1414	18	2.08E-01	5.5	
6	0	399.18	22	8	0.71	1595.30	1587	15	1.19E-02	35.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 14:22:15

Configuration : $DISK1:[GER13.SAMPLE]H571M1AC_190661351.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 13:51:55
Sample ID : H571M1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.36 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	184	33.00	2.705E+00	6.882E+02	6.890E+02	15.90
	276.40	93	6.90	2.897E+00	1.549E+03	1.551E+03	28.39
	302.84	141	17.80	2.900E+00	9.073E+02	9.082E+02	13.01
	356.00	375	62.05*	2.903E+00	6.940E+02	6.947E+02	7.69
	383.85	------	8.70	2.902E+00	------	Line Not Found	------

Flag: "*" = Keyline

Sample ID : H571M1AC Acquisition date : 19-JUN-2006 13:51:55

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	286.01	22	21	1.66	1143.49	1137	16	1.25E-02	49.4	2.90E+00	
0	399.18	22	8	0.71	1595.30	1587	15	1.19E-02	35.2	2.90E+00	T

Flags: "T" = Tentatively associated

Sample ID : H571M1AC Acquisition date : 19-JUN-2006 13:51:55

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
SE-75	119.78D	0.05	121.12	16.70	--- Not Found ---		Abun.
			136.00	59.20	--- Not Found ---		
			264.65*	59.80	--- Not Found ---		
			279.53	25.20	--- Not Found ---		
			400.65	11.40	2.244E+02	35.56	
		% Abundances Found =		6.62			
TL-208	1.41E+10Y	0.00	277.35	6.80	1.572E+03	28.39	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 14:22:16

Configuration : $DISK1:[GER13.SAMPLE]H571M1AC_190661351.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 13:51:55
Sample ID : H571M1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.36 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.947E+02	5.345E+01	4.742E+01	9.484E-01	14.651

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-4.036E+01		7.352E+01	2.616E+02	5.247E+00	-0.154
NA-22	1.406E+00		4.667E+00	1.930E+01	4.072E-01	0.073
K-40	-1.794E+02		8.781E+01	4.125E+02	8.807E+00	-0.435
SC-46	2.206E+00		6.552E+00	2.686E+01	5.609E-01	0.082
CR-51	4.041E+01		9.644E+01	3.618E+02	7.238E+00	0.112
MN-54	-5.221E+00		5.275E+00	1.849E+01	3.788E-01	-0.282
CO-57	-3.284E+01		1.069E+02	3.840E+02	7.916E+00	-0.086
CO-58	-9.151E+00		6.649E+00	2.224E+01	4.548E-01	-0.411
FE-59	3.147E+00		9.749E+00	3.951E+01	8.239E-01	0.080
CO-60	-2.414E+00		2.978E+00	1.131E+01	2.394E-01	-0.213
ZN-65	-4.192E+00		1.196E+01	4.425E+01	9.237E-01	-0.095
SE-75	-1.234E+01		1.539E+01	5.388E+01	1.081E+00	-0.229
SR-85	-2.595E+01		1.100E+01	3.340E+01	6.709E-01	-0.777
Y-88	3.884E-02		1.830E+00	9.655E+00	2.109E-01	0.004
NB-94	1.171E+01		5.327E+00	2.442E+01	5.013E-01	0.480
NB-95	-1.939E+00		6.374E+00	2.406E+01	4.905E-01	-0.081
TC-95M	2.538E+00		1.817E+01	6.478E+01	1.309E+00	0.039
ZR-95	-7.739E+00		7.077E+00	2.521E+01	5.137E-01	-0.307
ZRNB-95	-6.310E+00		1.229E+01	4.539E+01	9.255E-01	-0.139
MO-99	9.366E+00		5.642E+01	2.069E+02	4.257E+00	0.045
RH-101	-7.190E+00		1.605E+01	5.555E+01	1.124E+00	-0.129
RH-102M	3.848E+00		6.416E+00	2.547E+01	5.108E-01	0.151
RU-103	-1.397E+01		8.229E+00	2.610E+01	5.239E-01	-0.535
RU-106DA	3.776E+01		7.272E+01	2.817E+02	5.692E+00	0.134
AG-108M	5.581E+00		7.852E+00	3.079E+01	6.166E-01	0.181
AG-110M	5.644E+00		6.127E+00	2.689E+01	5.526E-01	0.210
SN-113DA	-6.238E+00		1.205E+01	4.352E+01	8.707E-01	-0.143

Sample ID : H571M1AC Acquisition date : 19-JUN-2006 13:51:55

---- Non-Identified Nuclides ----

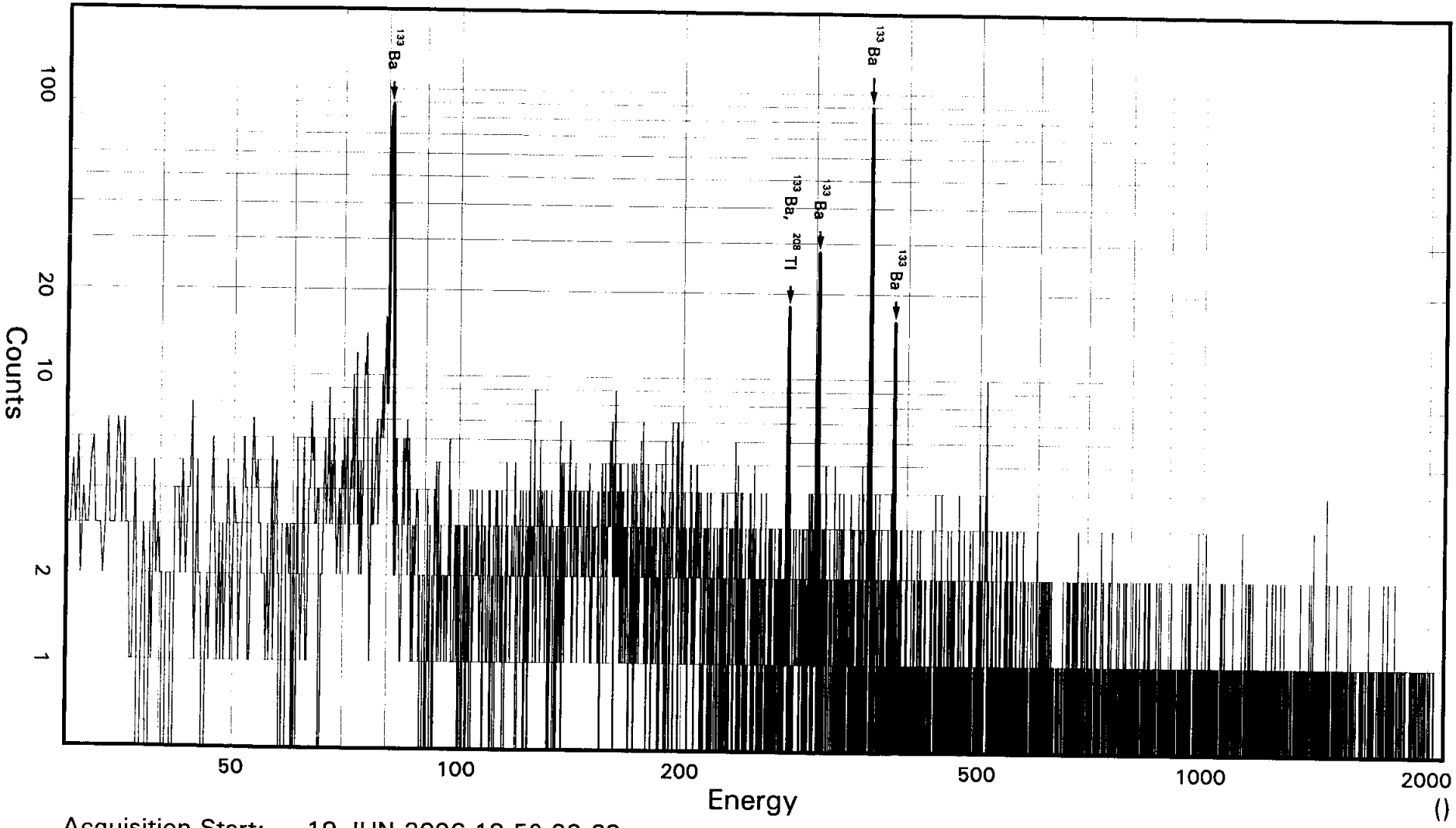
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-3.943E+00		6.250E+00	2.271E+01	4.584E-01	-0.174
SB-125	-1.582E+01		1.975E+01	7.049E+01	1.411E+00	-0.224
SN-126DA	1.056E+01		5.153E+00	2.352E+01	4.764E-01	0.449
I-131	-5.083E+00		1.502E+01	5.369E+01	1.074E+00	-0.095
CS-134	3.382E+00		7.266E+00	2.876E+01	5.875E-01	0.118
CS-137DA	-2.414E+00		6.822E+00	2.521E+01	5.105E-01	-0.096
LA-138	-9.244E-02		3.717E+00	1.703E+01	3.630E-01	-0.005
CE-139	-1.726E+01		1.413E+01	4.769E+01	9.722E-01	-0.362
BA-140	-2.578E+01		3.580E+01	1.250E+02	2.513E+00	-0.206
BALA-140	2.521E+01		9.627E+00	5.404E+01	1.164E+00	0.466
LA-140	9.657E+01		4.566E+01	2.410E+02	5.190E+00	0.401
CE-141	-2.972E+01		2.646E+01	9.076E+01	1.864E+00	-0.327
CE-144	-3.222E+01		1.065E+02	3.660E+02	7.555E+00	-0.088
CEPR-144	-6.620E+01		2.129E+02	7.314E+02	1.510E+01	-0.091
PM-144	-5.929E+00		6.339E+00	2.216E+01	4.476E-01	-0.268
PM-146	-5.037E-01		9.981E+00	3.745E+01	7.504E-01	-0.013
EU-152	-5.627E+00		2.639E+01	9.600E+01	1.920E+00	-0.059
EU-154	3.945E+00		1.310E+01	5.417E+01	1.143E+00	0.073
EU-155	-4.886E+01		5.000E+01	1.688E+02	3.545E+00	-0.289
HF-181	-7.994E+00		8.702E+00	3.011E+01	6.039E-01	-0.266
BI-207	4.182E+00		7.077E+00	2.777E+01	5.594E-01	0.151
TL-208	-4.305E+00		8.974E+00	3.437E+01	6.929E-01	-0.125
BI-210M	5.422E+00		1.706E+01	6.307E+01	1.265E+00	0.086
BI-212	-9.566E+01		8.474E+01	2.856E+02	8.726E+00	-0.335
PB-212	6.375E+00		2.622E+01	9.586E+01	1.927E+00	0.067
BI-214	5.294E+01		1.928E+01	8.464E+01	1.709E+00	0.626
PB-214	-5.996E+01		3.047E+01	8.255E+01	1.651E+00	-0.726
RA-223	5.397E+01		7.079E+01	2.385E+02	4.782E+00	0.226
RA-224DA	6.414E+00		2.638E+01	9.644E+01	1.939E+00	0.067
RA-226DA	5.284E+01		1.927E+01	8.460E+01	1.708E+00	0.625
AC-227DA	-1.852E+02		1.015E+02	3.191E+02	6.417E+00	-0.580
AC-228	-4.518E+00		2.249E+01	9.294E+01	1.913E+00	-0.049
RA-228DA	-4.527E+00		2.254E+01	9.313E+01	1.917E+00	-0.049
TH-228DA	-1.206E+01		2.513E+01	9.625E+01	1.940E+00	-0.125
TH-232DA	-1.583E+01		6.663E+01	2.425E+02	4.851E+00	-0.065
TH-234DA	6.211E+02		6.092E+02	2.790E+03	5.779E+01	0.223
U-234DA	-6.122E+01		5.205E+01	1.774E+02	3.553E+00	-0.345
U-235HP	5.243E+01		1.041E+02	3.871E+02	7.955E+00	0.135
NP-237DA	1.845E+01		2.268E+01	8.713E+01	1.744E+00	0.212
U-238DA	-5.996E+01		3.047E+01	8.255E+01	1.651E+00	-0.726
U-238DHP	3.850E+01		2.837E+02	1.051E+03	2.319E+01	0.037
AM-241HP	8.556E+00		3.004E+01	1.073E+02	2.383E+00	0.080

STL Richland WA.

BA133

Sample ID: H571N1AC
Detector ID: GER12 1

Batch ID: 6146445



Acquisition Start: 19-JUN-2006 13:52:28.68
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.25233E+01
Slope: 2.47509E-01
Quadrature: -2.00961E-09

SAMPLE IDENTIFICATION: H571N1AC

CONFIGURATION ID: GER12:H571N1AC_190661352
TITLE : BA133
SAMPLE ID : H571N1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 13:52:28
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:53.77
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.2523E+01 keV
ENERGY SLOPE: 2.4751E-01 keV/C
ENERGY Q COEFF: -.2010E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0884E-01 keV
FWHM SLOPE: 3.5936E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 2.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 14:22:45

Configuration : $DISK1:[GER12.SAMPLE]H571N1AC_190661352.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 13:52:28
Sample ID : H571N1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.34 0.0%
Start energy : 12.77 End energy : 2039.98
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	75.16*	2	35	0.73	253.09	248	10	1.02E-03	662.8	
2	0	80.97	277	74	0.80	276.56	272	10	1.54E-01	8.5	
3	0	276.54	52	24	0.59	1066.69	1058	16	2.89E-02	25.2	
4	0	302.82	126	10	0.97	1172.87	1163	16	7.03E-02	10.2	
5	0	356.11	376	30	0.95	1388.21	1378	21	2.09E-01	6.4	
6	0	383.95	66	4	1.11	1500.69	1493	15	3.68E-02	13.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 14:22:46

Configuration : $DISK1:[GER12.SAMPLE]H571N1AC_190661352.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 13:52:28
Sample ID : H571N1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.34 0.0%
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	277	33.00	2.899E+00	9.653E+02	9.663E+02	10.07
	276.40	52	6.90	3.105E+00	8.091E+02	8.100E+02	25.79
	302.84	126	17.80	3.109E+00	7.620E+02	7.628E+02	11.58
	356.00	376	62.05*	3.111E+00	6.487E+02	6.494E+02	8.34
	383.85	66	8.70	3.111E+00	8.163E+02	8.172E+02	14.85

Flag: "*" = Keyline

Sample ID : H571N1AC Acquisition date : 19-JUN-2006 13:52:28

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	75.16	2	35	0.73	253.09	248	10	1.02E-03	****	2.88E+00	

Flags: "T" = Tentatively associated

Sample ID : H571N1AC Acquisition date : 19-JUN-2006 13:52:28

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	8.210E+02	25.79	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 14:22:48

Configuration	: $DISK1:[GER12.SAMPLE]H571N1AC_190661352.CNF;1		
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8		
Analyses by	: MINACT V2.8		
Sample title	: BA133		
Sample date	: 13-JUN-2006 12:00:00	Acquisition date	: 19-JUN-2006 13:52:28
Sample ID	: H571N1AC	Sample quantity	: 1.0000 SAMPL
Sample type	:	Sample geometry	: BA133T15
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.34 0.0%
Peak Width (FWHM)	: 3.00	Confidence level	: 5.00 %
Energy tolerance	: 2.00	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 5.00 %
Efficiency type	: Empirical	Efficiencies at	: Peak Energy
Abundance limit	: 80.00	WTM error limit	: 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.494E+02	5.413E+01	3.775E+01	7.550E-01	17.201

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	7.755E+00		4.942E+01	1.942E+02	3.895E+00	0.040
NA-22	1.049E+00		3.035E+00	1.362E+01	2.870E-01	0.077
K-40	-1.836E+01		4.974E+01	2.342E+02	4.994E+00	-0.078
SC-46	3.091E+00		3.415E+00	1.607E+01	3.352E-01	0.192
CR-51	-7.058E+00		6.710E+01	2.493E+02	4.987E+00	-0.028
MN-54	6.785E+00		4.146E+00	1.935E+01	3.962E-01	0.351
CO-57	-2.877E+01		7.142E+01	2.560E+02	5.273E+00	-0.112
CO-58	-2.130E+00		3.236E+00	1.258E+01	2.571E-01	-0.169
FE-59	4.483E+00		7.990E+00	3.422E+01	7.129E-01	0.131
CO-60	-1.233E+00		2.025E+00	8.350E+00	1.766E-01	-0.148
ZN-65	-1.070E+01		7.959E+00	2.689E+01	5.608E-01	-0.398
SE-75	-3.818E+00		9.868E+00	3.623E+01	7.267E-01	-0.105
SR-85	-2.408E+01		8.884E+00	2.551E+01	5.125E-01	-0.944
Y-88	-3.611E+00		2.094E+00	3.306E+00	7.209E-02	-1.092
NB-94	-3.229E+00		3.280E+00	1.183E+01	2.427E-01	-0.273
NB-95	-1.608E+00		3.036E+00	1.236E+01	2.520E-01	-0.130
TC-95M	-1.147E+00		1.190E+01	4.427E+01	8.944E-01	-0.026
ZR-95	8.382E+00		6.849E+00	3.191E+01	6.499E-01	0.263
ZRNB-95	-2.760E+00		5.804E+00	2.382E+01	4.855E-01	-0.116
MO-99	-1.155E+01		4.303E+01	1.604E+02	3.299E+00	-0.072
RH-101	1.710E+01		1.167E+01	4.731E+01	9.568E-01	0.361
RH-102M	-6.114E+00		5.060E+00	1.704E+01	3.416E-01	-0.359
RU-103	-4.483E+00		4.603E+00	1.614E+01	3.240E-01	-0.278
RU-106DA	9.268E+01		4.518E+01	2.120E+02	4.282E+00	0.437
AG-108M	-1.675E+01		5.925E+00	1.563E+01	3.131E-01	-1.072
AG-110M	6.188E+00		4.879E+00	2.313E+01	4.751E-01	0.268
SN-113DA	7.271E-02		8.208E+00	3.185E+01	6.372E-01	0.002

Sample ID : H571N1AC Acquisition date : 19-JUN-2006 13:52:28

---- Non-Identified Nuclides ----

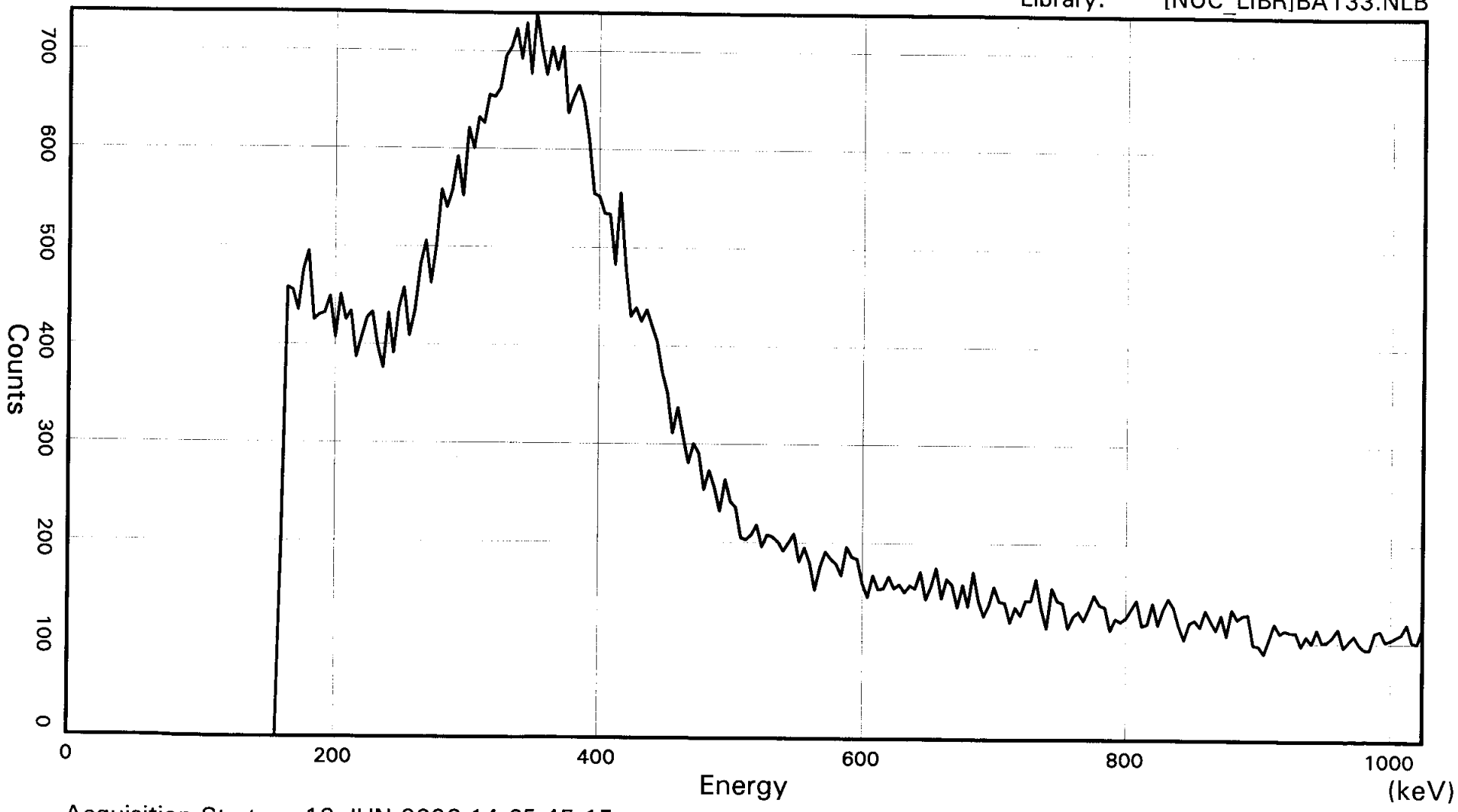
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-2.525E+00		4.917E+00	1.844E+01	3.721E-01	-0.137
SB-125	-1.828E+01		1.325E+01	4.408E+01	8.825E-01	-0.415
SN-126DA	-6.758E-02		3.454E+00	1.422E+01	2.880E-01	-0.005
I-131	-3.344E+00		1.257E+01	4.694E+01	9.388E-01	-0.071
CS-134	-3.539E+00		3.762E+00	1.386E+01	2.830E-01	-0.255
CS-137DA	3.632E+00		4.227E+00	1.901E+01	3.849E-01	0.191
LA-138	-1.626E+00		2.915E+00	1.257E+01	2.677E-01	-0.129
CE-139	2.698E+00		1.071E+01	3.911E+01	7.970E-01	0.069
BA-140	-1.269E+01		2.119E+01	8.101E+01	1.629E+00	-0.157
BALA-140	-3.465E+00		5.878E+00	2.467E+01	5.306E-01	-0.140
LA-140	-1.546E+01		2.622E+01	1.101E+02	2.366E+00	-0.140
CE-141	-8.298E+00		1.982E+01	6.996E+01	1.436E+00	-0.119
CE-144	4.286E+01		6.412E+01	2.499E+02	5.156E+00	0.172
CEPR-144	8.741E+01		1.284E+02	5.007E+02	1.033E+01	0.175
PM-144	-6.448E+00		4.657E+00	1.557E+01	3.144E-01	-0.414
PM-146	-6.915E+00		7.092E+00	2.479E+01	4.968E-01	-0.279
EU-152	7.536E+00		1.960E+01	7.888E+01	1.578E+00	0.096
EU-154	2.943E+00		8.518E+00	3.822E+01	8.055E-01	0.077
EU-155	3.991E+01		3.300E+01	1.345E+02	2.822E+00	0.297
HF-181	3.717E-01		5.561E+00	2.215E+01	4.444E-01	0.017
BI-207	-8.166E+00		4.324E+00	1.341E+01	2.702E-01	-0.609
TL-208	-1.071E+00		3.778E+00	1.539E+01	3.103E-01	-0.070
BI-210M	-1.683E+01		1.108E+01	3.620E+01	7.260E-01	-0.465
BI-212	-1.044E+02		4.900E+01	1.217E+02	3.717E+00	-0.858
PB-212	-1.294E+01		1.506E+01	5.287E+01	1.063E+00	-0.245
BI-214	6.198E-01		8.702E+00	3.533E+01	7.131E-01	0.018
PB-214	-3.714E+01		2.254E+01	5.965E+01	1.193E+00	-0.623
RA-223	3.835E+01		4.559E+01	1.814E+02	3.637E+00	0.211
RA-224DA	-1.302E+01		1.516E+01	5.319E+01	1.069E+00	-0.245
RA-226DA	5.252E-01		8.690E+00	3.525E+01	7.115E-01	0.015
AC-227DA	9.450E+01		6.351E+01	2.571E+02	5.169E+00	0.368
AC-228	-1.367E-01		1.382E+01	5.608E+01	1.154E+00	-0.002
RA-228DA	-1.369E-01		1.385E+01	5.619E+01	1.156E+00	-0.002
TH-228DA	-3.001E+00		1.058E+01	4.310E+01	8.689E-01	-0.070
TH-232DA	-2.865E+00		4.461E+01	1.662E+02	3.324E+00	-0.017
TH-234DA	8.444E+01		5.116E+02	2.173E+03	4.499E+01	0.039
U-234DA	1.380E+01		3.555E+01	1.345E+02	2.693E+00	0.103
U-235HP	-9.896E+01		8.296E+01	2.776E+02	5.701E+00	-0.356
NP-237DA	2.164E+01		1.664E+01	6.819E+01	1.364E+00	0.317
U-238DA	-3.714E+01		2.254E+01	5.965E+01	1.193E+00	-0.623
U-238DHP	2.938E+02		2.349E+02	9.082E+02	1.999E+01	0.323
AM-241HP	-5.402E+00		1.880E+01	6.851E+01	1.519E+00	-0.079

STL Richland WA.

BA133

Sample ID: H571Q1AC
Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start: 19-JUN-2006 14:25:45.15
Preset Live Time: 0 00:30:00
Elapsed Live Time: 0 00:30:00
Weighting: DERIVED

Start Channel: 80
End Channel: 113
Iterations: 5
Gain shift: Iter

SAMPLE IDENTIFICATION: H571Q1AC

CONFIGURATION ID: NAI1:H571Q1AC_190661425
TITLE : BA133
SAMPLE ID : H571Q1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 14:25:45
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 17-NOV-1993 10:39:59.60
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY:

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 0.0000E+00 keV
ENERGY SLOPE: 4.0000E+00 keV/C
ENERGY Q COEFF: 0.0000E+00 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: -.2302E+02 keV
FWHM SLOPE: 5.7163E+00 sqr keV
ITERATIONS: 5
GAUSSIAN SENSITIVITY: 35.00 %

ABUNDANCE LIMIT: 75.00 %
ENERGY TOLERANCE: 20.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]BA133.NLB

VMS NAI Report V1.2 Generated 19-JUN-2006 14:55:50

Configuration	: RDND06$DKA100:[NAI1.SAMPLE]H571Q1AC_190661425.CNF;1		
Analyses by	: NAI V3.0		
Sample title	: BA133		
Sample date	: 13-JUN-2006 12:00:00	Acquisition date	: 19-JUN-2006 14:25:45
Sample ID	: H571Q1AC	Sample quantity	: 1.0000 sampl
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.65 0.0%
Sample Multiplier	: 1.00	Rejection Coeff.	: 0.00
Gain shift type	: ITER	Threshold Shift	: No
Weighting type	: DERIVED	Calculated counts	: No
Iterations	: 5		

NAI Residuals Report

Ratio of Residuals Over Standard Deviation Per Channel

80:	5.0	4.6	5.3	4.8	5.2	2.7	4.2	0.7
88:	2.4	1.2	-0.4	0.1	0.8	-0.3	-1.5	0.1
96:	0.2	-1.6	-1.9	-3.4	-4.0	-3.3	-3.9	-4.8
104:	-1.8	-4.1	-5.5	-4.3	-4.6	-3.7	-4.1	-4.2
112:	-3.1	-4.1						

List of Suspicious Channels

81 82 83 84 85

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	1.07E+01	0.00E+00	1.03E+00
2	5.28E+00	0.00E+00	1.05E+00
3	1.73E+00	0.00E+00	1.07E+00
4	5.41E-01	0.00E+00	1.08E+00

Brief Report

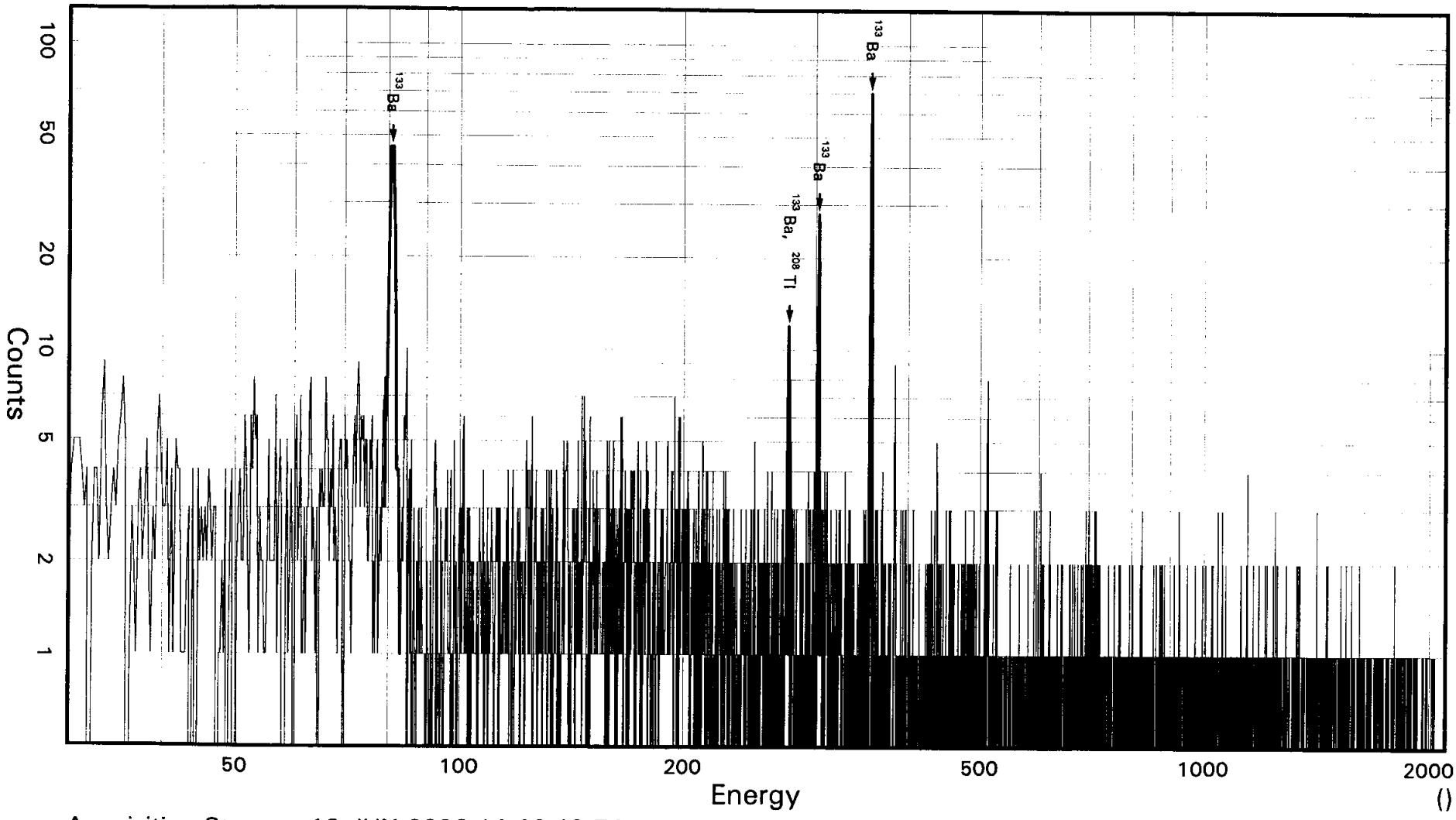
Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	685.	6.70
Total Activity :	685.	

STL Richland WA.

BA133

Sample ID: H571R1AC
Detector ID: GER10 1

Batch ID: 6146445



Acquisition Start: 19-JUN-2006 14:26:48.74
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.56759E+01
Slope: 2.46944E-01
Quadrature: 3.15282E-09

SAMPLE IDENTIFICATION: H571R1AC

CONFIGURATION ID: GER10:H571R1AC_190661426
TITLE : BA133
SAMPLE ID : H571R1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 14:26:48
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:08.65
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.5676E+01 keV
ENERGY SLOPE: 2.4694E-01 keV/C
ENERGY Q COEFF: 3.1528E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.9758E-01 keV
FWHM SLOPE: 2.6348E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 14:57:05

Configuration : $DISK1:[GER10.SAMPLE]H571R1AC_190661426.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 14:26:48
Sample ID : H571R1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.21 0.0%
Start energy : 18.15 End energy : 2038.85
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.93	257	45	1.34	264.25	257	17	1.43E-01	8.9	
2	0	84.83*	28	9	0.86	280.04	274	13	1.55E-02	32.3	
3	0	276.71	67	9	1.35	1057.04	1048	19	3.75E-02	16.3	
4	0	302.77	105	25	0.89	1162.56	1153	20	5.82E-02	15.3	
5	0	356.03	364	0	1.13	1378.22	1369	20	2.02E-01	5.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 14:57:05

Configuration : $DISK1:[GER10.SAMPLE]H571R1AC_190661426.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 14:26:48
Sample ID : H571R1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.21 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	257	33.00	2.399E+00	1.083E+03	1.084E+03	10.40
	276.40	67	6.90	2.578E+00	1.264E+03	1.265E+03	17.18
	302.84	105	17.80	2.582E+00	7.595E+02	7.604E+02	16.17
	356.00	364	62.05*	2.584E+00	7.567E+02	7.576E+02	7.51
	383.85	------	8.70	2.584E+00	------	Line Not Found	------

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H571R1AC

Acquisition date : 19-JUN-2006 14:26:48

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	84.83	28	9	0.86	280.04	274	13	1.55E-02	32.3	2.41E+00	

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : H571R1AC

Acquisition date : 19-JUN-2006 14:26:48

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	1.282E+03	17.18	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 14:57:07

Configuration : $DISK1:[GER10.SAMPLE]H571R1AC_190661426.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00
Sample ID : H571R1AC
Sample type :
Elapsed live time: 0 00:30:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 19-JUN-2006 14:26:48
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.21 0.0%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.576E+02	5.693E+01	4.420E+01	8.839E-01	17.141

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	4.092E+01		5.849E+01	2.436E+02	4.887E+00	0.168
NA-22	1.329E+00		3.083E+00	1.474E+01	3.115E-01	0.090
K-40	4.994E+01		4.747E+01	2.433E+02	5.207E+00	0.205
SC-46	7.168E+00		4.700E+00	2.250E+01	4.704E-01	0.319
CR-51	-1.531E+02		8.745E+01	2.749E+02	5.501E+00	-0.557
MN-54	-5.122E-02		4.255E+00	1.756E+01	3.600E-01	-0.003
CO-57	-1.185E+02		1.018E+02	3.384E+02	6.983E+00	-0.350
CO-58	4.325E+00		3.183E+00	1.703E+01	3.486E-01	0.254
FE-59	2.328E+00		6.782E+00	3.091E+01	6.455E-01	0.075
CO-60	-4.752E-01		5.538E+00	2.160E+01	4.582E-01	-0.022
ZN-65	-2.383E+01		8.910E+00	1.988E+01	4.155E-01	-1.199
SE-75	6.340E-01		1.280E+01	4.826E+01	9.681E-01	0.013
SR-85	-1.200E+01		1.066E+01	3.596E+01	7.225E-01	-0.334
Y-88	2.959E+00		2.099E+00	1.373E+01	3.008E-01	0.216
NB-94	-1.465E+00		4.439E+00	1.736E+01	3.569E-01	-0.084
NB-95	-1.320E+01		5.358E+00	1.380E+01	2.816E-01	-0.956
TC-95M	-5.436E+00		1.531E+01	5.525E+01	1.117E+00	-0.098
ZR-95	-2.356E+00		7.562E+00	3.050E+01	6.218E-01	-0.077
ZRNB-95	-2.498E+01		1.014E+01	2.613E+01	5.331E-01	-0.956
MO-99	6.281E+01		5.246E+01	2.019E+02	4.159E+00	0.311
RH-101	-2.229E+01		1.532E+01	5.384E+01	1.089E+00	-0.414
RH-102M	3.491E+00		5.867E+00	2.430E+01	4.873E-01	0.144
RU-103	-4.898E+00		6.695E+00	2.431E+01	4.881E-01	-0.201
RU-106DA	3.924E+01		6.354E+01	2.564E+02	5.181E+00	0.153
AG-108M	-1.903E+01		8.082E+00	2.416E+01	4.838E-01	-0.788
AG-110M	1.103E+01		6.501E+00	3.095E+01	6.367E-01	0.356
SN-113DA	1.209E+01		9.858E+00	4.208E+01	8.418E-01	0.287

---- Non-Identified Nuclides ----

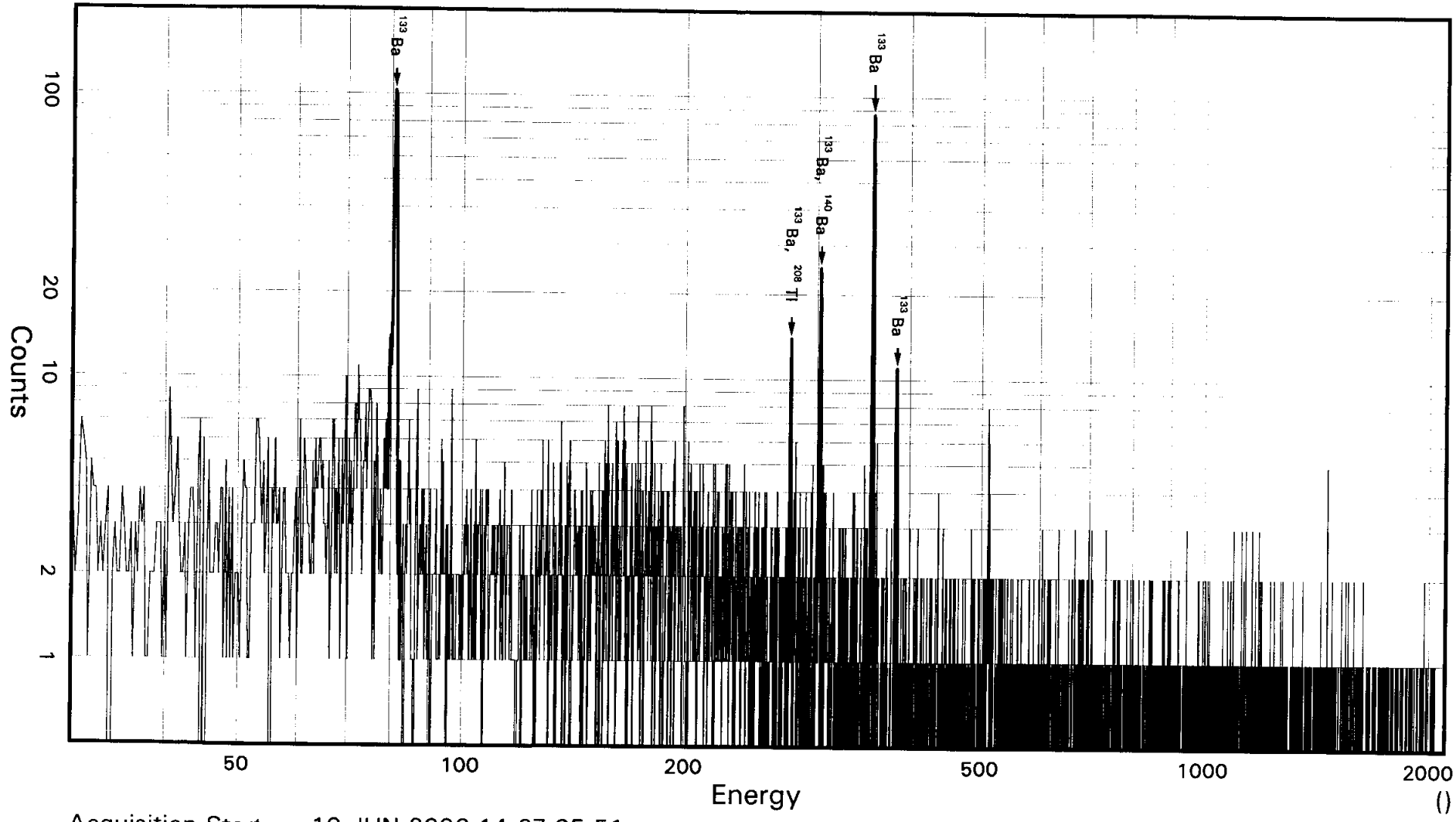
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	2.407E-01		7.533E+00	2.845E+01	5.743E-01	0.008
SB-125	2.327E+01		2.191E+01	9.158E+01	1.834E+00	0.254
SN-126DA	-4.176E+00		5.469E+00	2.002E+01	4.058E-01	-0.209
I-131	-1.231E+01		1.343E+01	4.792E+01	9.584E-01	-0.257
CS-134	3.126E+00		4.907E+00	2.188E+01	4.474E-01	0.143
CS-137DA	2.278E+00		6.235E+00	2.575E+01	5.217E-01	0.088
LA-138	6.198E+00		3.594E+00	2.222E+01	4.747E-01	0.279
CE-139	2.625E+01		1.308E+01	5.303E+01	1.082E+00	0.495
BA-140	1.639E+01		2.101E+01	9.707E+01	1.953E+00	0.169
BALA-140	-1.203E+01		6.975E+00	1.098E+01	2.370E-01	-1.096
LA-140	-3.009E+01		2.762E+01	9.801E+01	2.116E+00	-0.307
CE-141	2.657E+01		2.517E+01	9.540E+01	1.961E+00	0.278
CE-144	1.053E+02		8.966E+01	3.489E+02	7.210E+00	0.302
CEPR-144	2.075E+02		1.791E+02	6.966E+02	1.439E+01	0.298
PM-144	5.708E+00		5.856E+00	2.469E+01	4.990E-01	0.231
PM-146	1.254E+00		9.359E+00	3.670E+01	7.355E-01	0.034
EU-152	3.988E+01		2.468E+01	1.055E+02	2.110E+00	0.378
EU-154	7.632E+00		7.730E+00	4.136E+01	8.741E-01	0.185
EU-155	-2.298E+01		4.331E+01	1.537E+02	3.233E+00	-0.150
HF-181	3.506E+00		7.318E+00	3.006E+01	6.032E-01	0.117
BI-207	3.003E+00		5.122E+00	2.157E+01	4.346E-01	0.139
TL-208	-8.529E-01		5.820E+00	2.276E+01	4.590E-01	-0.037
BI-210M	-3.470E-01		1.515E+01	5.660E+01	1.135E+00	-0.006
BI-212	-7.655E+01		6.222E+01	2.146E+02	6.557E+00	-0.357
PB-212	-1.158E+01		1.634E+01	5.818E+01	1.170E+00	-0.199
BI-214	7.466E+00		1.317E+01	5.303E+01	1.071E+00	0.141
PB-214	-1.303E+01		2.590E+01	7.568E+01	1.514E+00	-0.172
RA-223	-1.912E+01		5.425E+01	1.980E+02	3.970E+00	-0.097
RA-224DA	-1.165E+01		1.644E+01	5.854E+01	1.177E+00	-0.199
RA-226DA	7.352E+00		1.315E+01	5.296E+01	1.070E+00	0.139
AC-227DA	-7.519E+01		6.365E+01	2.170E+02	4.365E+00	-0.347
AC-228	4.650E+00		1.290E+01	5.790E+01	1.193E+00	0.080
RA-228DA	4.659E+00		1.293E+01	5.801E+01	1.196E+00	0.080
TH-228DA	-2.389E+00		1.630E+01	6.374E+01	1.285E+00	-0.037
TH-232DA	-7.721E+01		5.421E+01	1.762E+02	3.525E+00	-0.438
TH-234DA	3.623E+01		5.694E+02	2.470E+03	5.122E+01	0.015
U-234DA	-4.625E+01		4.308E+01	1.460E+02	2.924E+00	-0.317
U-235HP	1.589E+01		9.931E+01	3.599E+02	7.401E+00	0.044
NP-237DA	3.573E+01		2.433E+01	9.721E+01	1.945E+00	0.368
U-238DA	-1.303E+01		2.590E+01	7.568E+01	1.514E+00	-0.172
U-238DHP	-4.296E+02		3.577E+02	1.212E+03	2.683E+01	-0.354
AM-241HP	-1.371E+01		3.470E+01	1.236E+02	2.756E+00	-0.111

STL Richland WA.

BA133

Sample ID: H571T1AC
Detector ID: GER12 1

Batch ID: 6146445



Acquisition Start: 19-JUN-2006 14:27:05.51
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.25233E+01
Slope: 2.47509E-01
Quadrature: -2.00961E-09

SAMPLE IDENTIFICATION: H571T1AC

CONFIGURATION ID: GER12:H571T1AC_190661427
TITLE : BA133
SAMPLE ID : H571T1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 14:27:05
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:53.77
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.2523E+01 keV
ENERGY SLOPE: 2.4751E-01 keV/C
ENERGY Q COEFF: -.2010E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0884E-01 keV
FWHM SLOPE: 3.5936E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 2.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 14:57:22

Configuration : $DISK1:[GER12.SAMPLE]H571T1AC_190661427.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 14:27:05
Sample ID : H571T1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.34 0.0%
Start energy : 12.77 End energy : 2039.98
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.91	355	48	0.70	276.32	268	16	1.97E-01	6.9	
2	0	276.30	47	8	0.80	1065.74	1060	11	2.63E-02	18.6	
3	0	302.95	98	36	0.83	1173.42	1164	18	5.44E-02	17.6	
4	0	356.06	430	9	1.10	1387.99	1379	18	2.39E-01	5.1	
5	0	383.94	59	11	1.75	1500.65	1493	15	3.26E-02	18.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 14:57:23

Configuration : $DISK1:[GER12.SAMPLE]H571T1AC_190661427.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 14:27:05
Sample ID : H571T1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.34 0.0%
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	355	33.00	2.899E+00	1.238E+03	1.239E+03	8.76
	276.40	47	6.90	3.105E+00	7.369E+02	7.378E+02	19.37
	302.84	98	17.80	3.109E+00	5.897E+02	5.903E+02	18.38
	356.00	430	62.05*	3.111E+00	7.424E+02	7.433E+02	7.41
	383.85	59	8.70	3.111E+00	7.235E+02	7.243E+02	18.82

Flag: "*" = Keyline

None

Flags: "T" = Tentatively associated

Sample ID : H571T1AC
Acquisition date : 19-JUN-2006 14:27:05

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
BA-140	12.79D	0.48	162.64	6.70	--- Not Found ---		Abun.
			304.84	4.50	3.249E+03	18.38	
			423.70	3.20	--- Not Found ---		
			537.32*	25.00	--- Not Found ---		
		% Abundances Found =		11.42			
TL-208	1.41E+10Y	0.00	277.35	6.80	7.478E+02	19.37	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 14:57:25

Configuration : $DISK1:[GER12.SAMPLE]H571T1AC_190661427.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 14:27:05
Sample ID : H571T1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.34 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.433E+02	5.509E+01	4.366E+01	8.731E-01	17.025

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	4.313E+01		3.917E+01	1.770E+02	3.549E+00	0.244
NA-22	-1.249E+00		3.046E+00	1.221E+01	2.572E-01	-0.102
K-40	2.407E+01		4.983E+01	2.459E+02	5.245E+00	0.098
SC-46	1.312E+00		3.859E+00	1.657E+01	3.457E-01	0.079
CR-51	-7.884E+01		5.391E+01	1.726E+02	3.454E+00	-0.457
MN-54	-1.189E+00		2.412E+00	1.004E+01	2.056E-01	-0.118
CO-57	8.104E+01		7.179E+01	2.829E+02	5.828E+00	0.286
CO-58	6.078E-01		3.697E+00	1.573E+01	3.215E-01	0.039
FE-59	2.238E+00		3.727E+00	2.015E+01	4.199E-01	0.111
CO-60	-1.943E-01		3.282E+00	1.363E+01	2.883E-01	-0.014
ZN-65	-1.742E+01		6.990E+00	1.647E+01	3.435E-01	-1.058
SE-75	-3.870E+00		1.237E+01	4.469E+01	8.964E-01	-0.087
SR-85	-2.416E+01		9.045E+00	2.616E+01	5.254E-01	-0.923
Y-88	-3.611E+00		2.094E+00	3.306E+00	7.211E-02	-1.092
NB-94	9.262E-01		2.856E+00	1.295E+01	2.658E-01	0.072
NB-95	-7.588E-01		4.321E+00	1.740E+01	3.546E-01	-0.044
TC-95M	1.664E+01		1.317E+01	5.204E+01	1.051E+00	0.320
ZR-95	-6.176E-01		6.865E+00	2.762E+01	5.626E-01	-0.022
ZRNB-95	-1.436E+00		8.178E+00	3.293E+01	6.711E-01	-0.044
MO-99	-7.422E+01		4.238E+01	1.437E+02	2.955E+00	-0.517
RH-101	-4.429E+00		1.055E+01	3.965E+01	8.018E-01	-0.112
RH-102M	-4.869E+00		4.344E+00	1.487E+01	2.983E-01	-0.327
RU-103	8.618E+00		5.229E+00	2.400E+01	4.818E-01	0.359
RU-106DA	-4.366E+01		3.847E+01	1.341E+02	2.708E+00	-0.326
AG-108M	-9.552E+00		5.880E+00	1.895E+01	3.795E-01	-0.504
AG-110M	-1.503E+00		4.613E+00	1.850E+01	3.801E-01	-0.081
SN-113DA	9.532E+00		5.780E+00	2.782E+01	5.565E-01	0.343

---- Non-Identified Nuclides ----

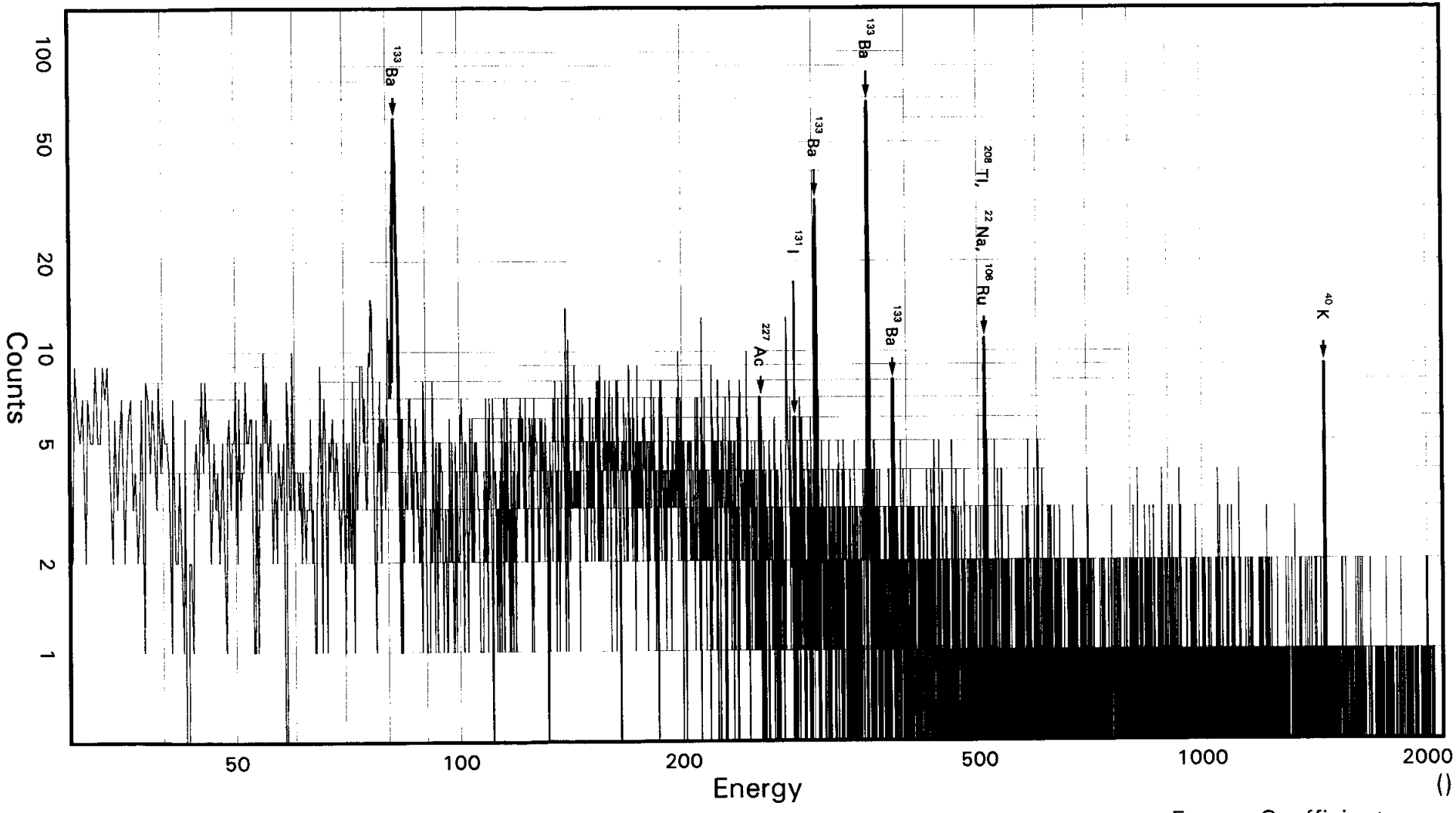
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-6.105E+00		5.310E+00	1.836E+01	3.704E-01	-0.333
SB-125	2.197E+01		1.644E+01	7.141E+01	1.430E+00	0.308
SN-126DA	-1.103E+01		4.426E+00	1.168E+01	2.365E-01	-0.945
I-131	-2.009E+01		1.063E+01	3.378E+01	6.756E-01	-0.595
CS-134	-3.539E+00		3.762E+00	1.386E+01	2.830E-01	-0.255
CS-137DA	-3.555E+00		3.912E+00	1.417E+01	2.869E-01	-0.251
LA-138	-5.071E+00		5.021E+00	1.813E+01	3.861E-01	-0.280
CE-139	3.611E+01		1.048E+01	4.474E+01	9.118E-01	0.807
BA-140	1.292E+01		2.458E+01	1.030E+02	2.072E+00	0.125
BALA-140	-5.459E-02		4.791E+00	2.471E+01	5.312E-01	-0.002
LA-140	-2.469E-01		2.155E+01	1.111E+02	2.390E+00	-0.002
CE-141	-2.205E+01		1.702E+01	5.661E+01	1.162E+00	-0.389
CE-144	1.037E+01		6.481E+01	2.439E+02	5.032E+00	0.043
CEPR-144	2.075E+01		1.296E+02	4.878E+02	1.006E+01	0.043
PM-144	3.040E+00		4.745E+00	1.974E+01	3.987E-01	0.154
PM-146	8.484E+00		6.915E+00	3.022E+01	6.055E-01	0.281
EU-152	-7.815E+00		2.026E+01	7.622E+01	1.524E+00	-0.103
EU-154	-3.506E+00		8.549E+00	3.425E+01	7.219E-01	-0.102
EU-155	3.334E+01		3.562E+01	1.412E+02	2.961E+00	0.236
HF-181	-3.468E+00		4.597E+00	1.688E+01	3.387E-01	-0.205
BI-207	1.373E+00		3.910E+00	1.657E+01	3.339E-01	0.083
TL-208	-1.267E+00		5.151E+00	2.003E+01	4.038E-01	-0.063
BI-210M	1.812E+01		1.340E+01	5.425E+01	1.088E+00	0.334
BI-212	-3.746E+01		5.378E+01	1.987E+02	6.068E+00	-0.189
PB-212	1.461E+00		1.616E+01	6.037E+01	1.214E+00	0.024
BI-214	1.693E+01		1.020E+01	4.568E+01	9.221E-01	0.371
PB-214	1.140E+01		1.889E+01	6.574E+01	1.315E+00	0.173
RA-223	-1.115E+02		4.682E+01	1.382E+02	2.770E+00	-0.807
RA-224DA	1.470E+00		1.626E+01	6.074E+01	1.221E+00	0.024
RA-226DA	1.683E+01		1.019E+01	4.562E+01	9.208E-01	0.369
AC-227DA	6.284E+01		5.954E+01	2.381E+02	4.789E+00	0.264
AC-228	-4.070E+00		1.056E+01	4.280E+01	8.808E-01	-0.095
RA-228DA	-4.079E+00		1.059E+01	4.289E+01	8.825E-01	-0.095
TH-228DA	-3.549E+00		1.443E+01	5.609E+01	1.131E+00	-0.063
TH-232DA	4.837E+01		4.939E+01	1.965E+02	3.930E+00	0.246
TH-234DA	1.293E+02		5.191E+02	2.221E+03	4.597E+01	0.058
U-234DA	5.947E+01		3.366E+01	1.399E+02	2.801E+00	0.425
U-235HP	6.322E+01		6.879E+01	2.687E+02	5.519E+00	0.235
NP-237DA	-1.187E+01		1.707E+01	5.973E+01	1.195E+00	-0.199
U-238DA	1.140E+01		1.889E+01	6.574E+01	1.315E+00	0.173
U-238DHP	-1.952E+02		2.626E+02	8.952E+02	1.971E+01	-0.218
AM-241HP	-2.099E+01		2.363E+01	8.063E+01	1.788E+00	-0.260

STL Richland WA.

BA133

Sample ID: H571V1AC
Detector ID: GER13 1

Batch ID: 6146445



Acquisition Start: 19-JUN-2006 14:27:19.67
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -6.10701E-01
Slope: 2.50772E-01
Quadrature: -1.04651E-07

SAMPLE IDENTIFICATION: H571V1AC

CONFIGURATION ID: GER13:H571V1AC_190661427
TITLE : BA133
SAMPLE ID : H571V1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 14:27:19
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:44:45.22
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.6107E+00 keV
ENERGY SLOPE: 2.5077E-01 keV/C
ENERGY Q COEFF: -.1047E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.1661E-01 keV
FWHM SLOPE: 4.3284E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 14:57:38

Configuration : $DISK1:[GER13.SAMPLE]H571V1AC_190661427.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 14:27:19
Sample ID : H571V1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.37 0.0%
Start energy : 19.45 End energy : 2046.69
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	76.24*	17	33	0.63	306.48	301	10	9.61E-03	73.3	
2	0	81.96	175	67	0.72	329.32	324	12	9.74E-02	12.2	
3	0	255.36	6	22	0.72	1021.17	1014	11	3.33E-03	156.8	
4	0	283.14	13	9	0.76	1132.02	1126	9	7.30E-03	49.5	
5	0	302.64	123	24	0.99	1209.88	1201	19	6.83E-02	13.1	
6	0	355.84	390	10	1.30	1422.28	1412	22	2.17E-01	5.5	
7	0	383.85	46	7	1.27	1534.09	1527	14	2.58E-02	19.0	
8	0	510.69*	7	5	1.14	2040.66	2030	20	4.05E-03	142.2	
9	0	1460.49*	5	0	1.73	5840.63	5826	25	2.53E-03	183.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 14:57:38

```
Configuration     : $DISK1:[GER13.SAMPLE]H571V1AC_190661427.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 14:27:19
Sample ID         : H571V1AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.37   0.0%
Energy tolerance :     1.50              Half life ratio  :     8.00
Errors propagated: Yes                   Systematic Error :     5.00 %
Efficiency type  : Empirical             Efficiencies at  : Peak Energy
Abundance limit  :    80.00
```

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
K-40	1460.81	5	10.67*	2.719E+00	5.228E+01	5.228E+01	183.25

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	175	33.00	2.704E+00	6.551E+02	6.558E+02	13.36
	276.40	------	6.90	2.897E+00	------ Line Not Found		------
	302.84	123	17.80	2.900E+00	7.934E+02	7.942E+02	14.18
	356.00	390	62.05*	2.903E+00	7.214E+02	7.222E+02	7.70
	383.85	46	8.70	2.902E+00	6.122E+02	6.129E+02	19.73

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H571V1AC

Acquisition date : 19-JUN-2006 14:27:19

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	76.24	17	33	0.63	306.48	301	10	9.61E-03	73.3	2.69E+00	
0	255.36	6	22	0.72	1021.17	1014	11	3.33E-03	****	2.89E+00	T
0	283.14	13	9	0.76	1132.02	1126	9	7.30E-03	49.5	2.90E+00	T
0	510.69	7	5	1.14	2040.66	2030	20	4.05E-03	****	2.89E+00	T

Flags: "T" = Tentatively associated

Sample ID : H571V1AC Acquisition date : 19-JUN-2006 14:27:19

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.01	511.00	179.68	4.699E+00	142.32	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
RU-106DA	368.20D	0.02	511.85	20.60	4.128E+01	142.32	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
I-131	8.04D	0.76	284.30	6.05	4.230E+02	49.77	Abun.
			364.48*	81.20	--- Not Found ---		
			636.97	7.26	--- Not Found ---		
			722.89	1.80	--- Not Found ---		
		% Abundances Found =		6.28			
TL-208	1.41E+10Y	0.00	277.35	6.80	--- Not Found ---		Abun.
			510.84	21.60	3.892E+01	142.32	
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		17.27			
AC-227DA	21.77Y	0.00	236.00*	11.34	--- Not Found ---		Abun.
			256.20	6.21	1.114E+02	156.88	
		% Abundances Found =		35.38			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 14:57:40

Configuration : $DISK1:[GER13.SAMPLE]H571V1AC_190661427.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 14:27:19
Sample ID : H571V1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.37 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
K-40	5.228E+01	9.579E+01	3.105E+01	6.631E-01	1.683
BA-133	7.222E+02	5.562E+01	5.096E+01	1.019E+00	14.173

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	5.690E+01		6.720E+01	2.683E+02	5.382E+00	0.212
NA-22	-1.659E+00		3.897E+00	1.530E+01	3.229E-01	-0.108
SC-46	4.783E+00		6.041E+00	2.612E+01	5.455E-01	0.183
CR-51	-4.061E+01		9.865E+01	3.502E+02	7.006E+00	-0.116
MN-54	-4.998E+00		6.278E+00	2.224E+01	4.555E-01	-0.225
CO-57	-1.395E+02		1.047E+02	3.569E+02	7.356E+00	-0.391
CO-58	6.714E+00		6.023E+00	2.539E+01	5.192E-01	0.264
FE-59	-1.885E+01		9.987E+00	3.052E+01	6.365E-01	-0.617
CO-60	-2.396E+00		4.211E+00	1.596E+01	3.381E-01	-0.150
ZN-65	-1.898E+01		1.096E+01	3.449E+01	7.200E-01	-0.550
SE-75	6.929E+00		1.613E+01	6.034E+01	1.210E+00	0.115
SR-85	2.083E+01		9.180E+00	3.484E+01	6.998E-01	0.598
Y-88	1.352E+00		2.254E+00	1.219E+01	2.662E-01	0.111
NB-94	5.542E+00		5.145E+00	2.201E+01	4.520E-01	0.252
NB-95	1.037E+01		5.829E+00	2.629E+01	5.361E-01	0.394
TC-95M	2.406E+01		1.706E+01	6.487E+01	1.311E+00	0.371
ZR-95	-8.169E+00		8.836E+00	3.185E+01	6.491E-01	-0.256
ZRNB-95	1.737E+01		1.130E+01	4.988E+01	1.017E+00	0.348
MO-99	3.030E+01		6.282E+01	2.313E+02	4.759E+00	0.131
RH-101	2.700E+01		1.600E+01	6.076E+01	1.229E+00	0.444
RH-102M	2.475E+00		6.749E+00	2.611E+01	5.237E-01	0.095
RU-103	9.528E-02		7.829E+00	2.946E+01	5.913E-01	0.003
RU-106DA	1.301E+01		6.649E+01	2.551E+02	5.154E+00	0.051
AG-108M	-1.198E+01		8.458E+00	2.816E+01	5.639E-01	-0.425
AG-110M	-1.574E+00		7.699E+00	2.909E+01	5.978E-01	-0.054
SN-113DA	-6.214E+00		1.179E+01	4.263E+01	8.529E-01	-0.146

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	4.336E-01		7.562E+00	2.852E+01	5.756E-01	0.015
SB-125	-1.733E+01		2.376E+01	8.429E+01	1.688E+00	-0.206
SN-126DA	-1.093E+01		6.587E+00	2.109E+01	4.273E-01	-0.518
I-131	-3.297E+00		1.888E+01	6.689E+01	1.338E+00	-0.049
CS-134	-5.186E+00		6.108E+00	2.190E+01	4.474E-01	-0.237
CS-137DA	6.172E+00		7.120E+00	2.888E+01	5.849E-01	0.214
LA-138	-2.066E+00		5.584E+00	2.203E+01	4.695E-01	-0.094
CE-139	-1.882E+01		1.435E+01	4.819E+01	9.825E-01	-0.390
BA-140	8.005E+01		3.672E+01	1.577E+02	3.171E+00	0.508
BALA-140	-1.068E+01		6.195E+00	9.748E+00	2.099E-01	-1.096
LA-140	-4.807E+01		2.787E+01	4.386E+01	9.444E-01	-1.096
CE-141	1.448E+01		2.585E+01	9.626E+01	1.977E+00	0.150
CE-144	7.759E+01		1.029E+02	3.746E+02	7.733E+00	0.207
CEPR-144	1.498E+02		2.054E+02	7.474E+02	1.543E+01	0.200
PM-144	-2.355E+00		6.228E+00	2.297E+01	4.640E-01	-0.103
PM-146	1.806E+00		8.865E+00	3.451E+01	6.916E-01	0.052
EU-152	-3.295E+00		2.732E+01	9.973E+01	1.995E+00	-0.033
EU-154	-3.424E+00		1.113E+01	4.427E+01	9.341E-01	-0.077
EU-155	2.630E+01		4.481E+01	1.676E+02	3.519E+00	0.157
HF-181	-1.623E+01		7.983E+00	2.417E+01	4.849E-01	-0.671
BI-207	-7.673E+00		6.231E+00	2.135E+01	4.300E-01	-0.359
TL-208	-8.454E-01		9.426E+00	3.661E+01	7.382E-01	-0.023
BI-210M	6.165E+00		1.798E+01	6.720E+01	1.348E+00	0.092
BI-212	5.192E+01		7.546E+01	3.127E+02	9.554E+00	0.166
PB-212	1.858E+01		2.655E+01	9.878E+01	1.986E+00	0.188
BI-214	-2.376E+01		1.491E+01	5.623E+01	1.135E+00	-0.423
PB-214	-1.904E+01		2.910E+01	9.034E+01	1.807E+00	-0.211
RA-223	-8.307E+01		6.480E+01	2.193E+02	4.396E+00	-0.379
RA-224DA	1.869E+01		2.672E+01	9.938E+01	1.998E+00	0.188
RA-226DA	-2.356E+01		1.492E+01	5.634E+01	1.138E+00	-0.418
AC-227DA	-1.584E+02		9.808E+01	3.126E+02	6.286E+00	-0.507
AC-228	3.941E+00		2.245E+01	9.521E+01	1.960E+00	0.041
RA-228DA	3.949E+00		2.249E+01	9.540E+01	1.964E+00	0.041
TH-228DA	-2.367E+00		2.640E+01	1.025E+02	2.067E+00	-0.023
TH-232DA	-4.877E+01		6.435E+01	2.268E+02	4.536E+00	-0.215
TH-234DA	-6.857E+01		8.698E+02	3.352E+03	6.943E+01	-0.020
U-234DA	7.850E+00		4.756E+01	1.766E+02	3.535E+00	0.044
U-235HP	1.887E+01		1.044E+02	3.828E+02	7.866E+00	0.049
NP-237DA	-4.238E+01		2.213E+01	6.981E+01	1.397E+00	-0.607
U-238DA	-1.904E+01		2.910E+01	9.034E+01	1.807E+00	-0.211
U-238DHP	-3.783E+02		2.551E+02	8.659E+02	1.910E+01	-0.437
AM-241HP	4.246E+01		3.207E+01	1.198E+02	2.661E+00	0.354

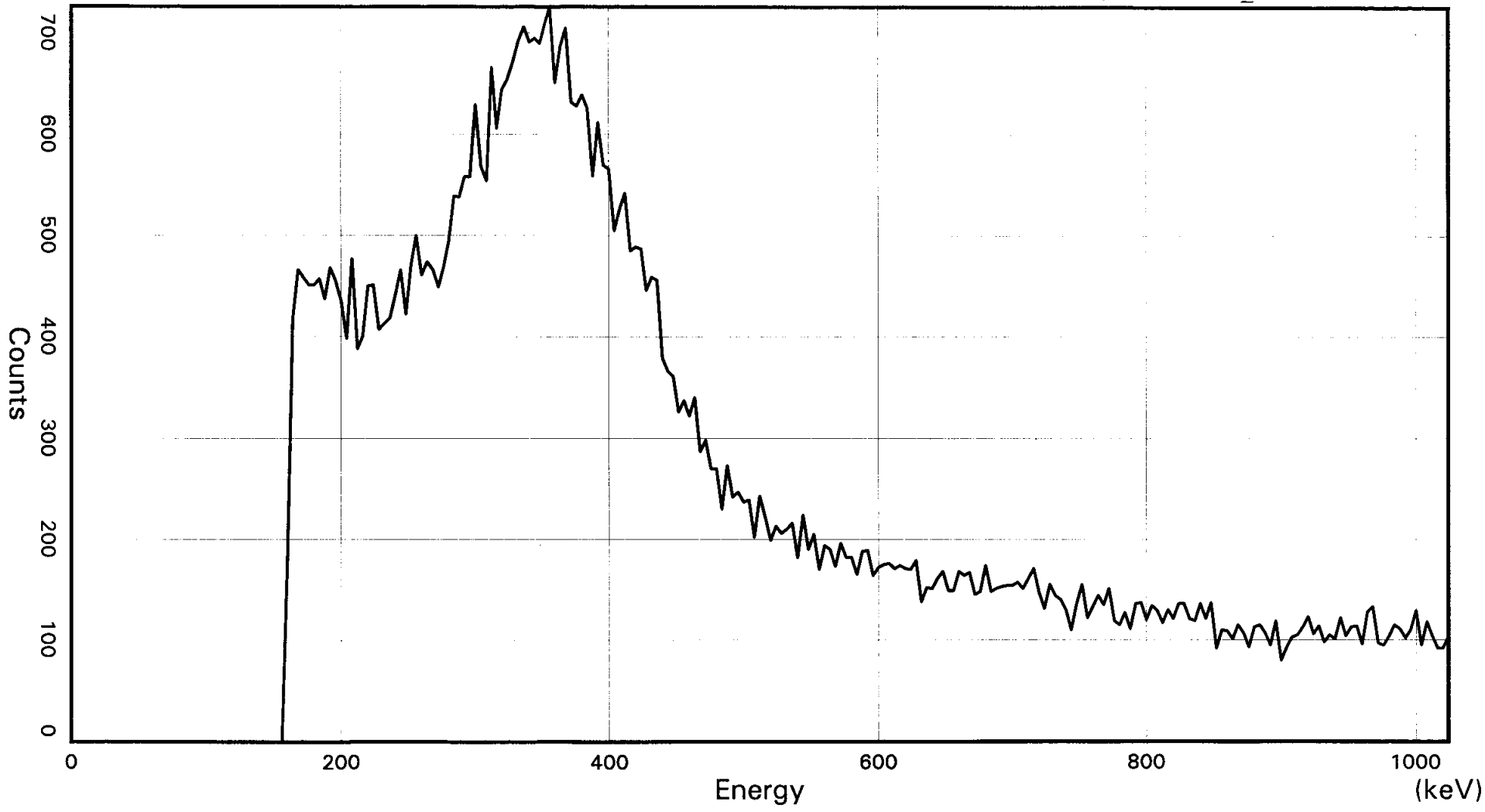
STL Richland WA.

BA133

Sample ID: H571X1AC

Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



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Preset Live Time:	0 00:30:00	End Channel:	113
Elapsed Live Time:	0 00:30:00	Iterations:	5
Weighting:	DERIVED	Gain shift:	Iter

SAMPLE IDENTIFICATION: H571X1AC

CONFIGURATION ID: NAI1:H571X1AC_190661500
TITLE : BA133
SAMPLE ID : H571X1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 15:00:02
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 17-NOV-1993 10:39:59.60
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY:

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 0.0000E+00 keV
ENERGY SLOPE: 4.0000E+00 keV/C
ENERGY Q COEFF: 0.0000E+00 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: -.2302E+02 keV
FWHM SLOPE: 5.7163E+00 sqr keV
ITERATIONS: 5
GAUSSIAN SENSITIVITY: 35.00 %

ABUNDANCE LIMIT: 75.00 %
ENERGY TOLERANCE: 20.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]BA133.NLB

VMS NAI Report V1.2 Generated 19-JUN-2006 15:30:07

```
Configuration     : RDND06$DKA100:[NAI1.SAMPLE]H571X1AC_190661500.CNF;1
Analyses by       : NAI V3.0
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:00:02
Sample ID         : H571X1AC             Sample quantity  : 1.0000 sampl
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.64   0.0%
Sample Multiplier:     1.00              Rejection Coeff. :     0.00
Gain shift type   : ITER                 Threshold Shift  : No
Weighting type    : DERIVED              Calculated counts: No
Iterations        :  5
```

NAI Residuals Report

Ratio of Residuals Over Standard Deviation Per Channel

80:	5.7	5.6	4.9	4.6	5.4	3.5	3.4	2.2
88:	2.1	2.9	-0.7	0.3	2.3	-2.5	-1.1	0.2
96:	-0.6	-4.6	-0.7	-1.8	-3.4	-4.1	-3.0	-1.6
104:	-5.1	-4.2	-2.8	-3.3	-3.0	-3.0	-5.1	-5.3
112:	-4.3	-5.9						

List of Suspicious Channels

81	82	83	84	85	86	87	88

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	1.06E+01	0.00E+00	1.02E+00
2	5.03E+00	0.00E+00	1.04E+00
3	1.22E+00	0.00E+00	1.07E+00
4	8.44E-01	0.00E+00	1.07E+00

Sample ID : H571X1AC Acquisition date : 19-JUN-2006 15:00:02

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	654.	8.06

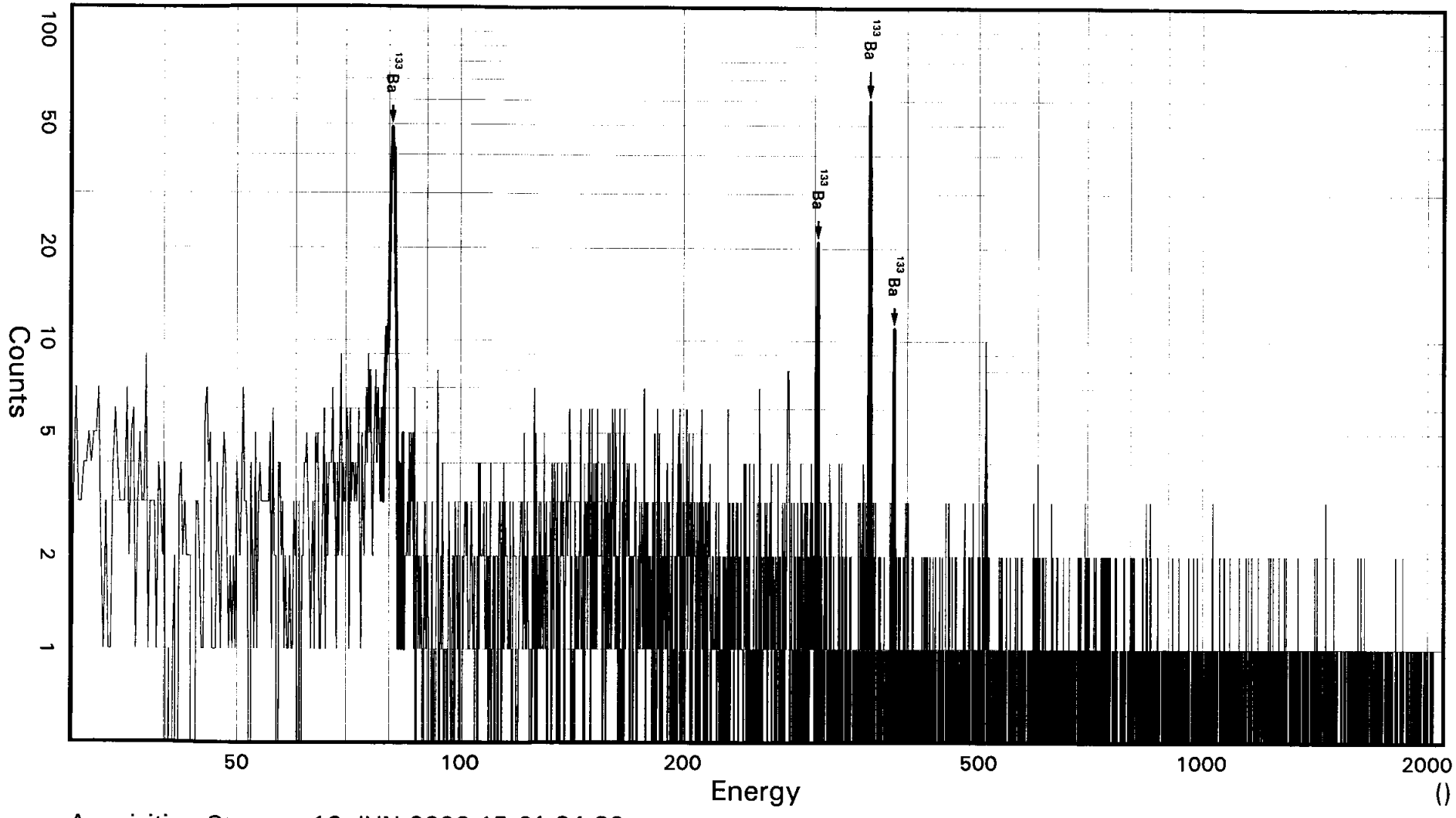
Total Activity :	654.	

STL Richland WA.

BA133

Sample ID: H57101AC
Detector ID: GER10 1

Batch ID: 6146445



Acquisition Start: 19-JUN-2006 15:01:34.80
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.56759E+01
Slope: 2.46944E-01
Quadrature: 3.15282E-09

SAMPLE IDENTIFICATION: H57101AC

CONFIGURATION ID: GER10:H57101AC_190661501
TITLE : BA133
SAMPLE ID : H57101AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 15:01:34
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:08.65
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.5676E+01 keV
ENERGY SLOPE: 2.4694E-01 keV/C
ENERGY Q COEFF: 3.1528E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.9758E-01 keV
FWHM SLOPE: 2.6348E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 15:31:54

```
Configuration     : $DISK1:[GER10.SAMPLE]H57101AC_190661501.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:01:34
Sample ID         : H57101AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.22   0.0%
Start energy      :    18.15             End energy       :  2038.85
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.84	282	45	1.25	263.87	253	24	1.57E-01	8.8	
2	0	302.92	104	17	1.20	1163.18	1151	21	5.79E-02	13.7	
3	0	356.11	329	10	1.29	1378.58	1369	20	1.83E-01	6.0	
4	0	383.89	41	7	1.03	1491.05	1484	14	2.28E-02	20.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 15:31:54

Configuration : $DISK1:[GER10.SAMPLE]H57101AC_190661501.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:01:34
Sample ID : H57101AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.22 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	282	33.00	2.398E+00	1.187E+03	1.188E+03	10.35
	276.40	------	6.90	2.578E+00	------ Line Not Found		------
	302.84	104	17.80	2.582E+00	7.559E+02	7.568E+02	14.72
	356.00	329	62.05*	2.584E+00	6.840E+02	6.847E+02	8.06
	383.85	41	8.70	2.584E+00	6.080E+02	6.087E+02	21.45

Flag: "*" = Keyline

None

Flags: "T" = Tentatively associated

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 15:31:57

Configuration : $DISK1:[GER10.SAMPLE]H57101AC_190661501.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:01:34
Sample ID : H57101AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.22 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.847E+02	5.518E+01	4.904E+01	9.807E-01	13.964

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	9.379E+01		6.718E+01	2.858E+02	5.733E+00	0.328
NA-22	1.349E+00		2.386E+00	1.271E+01	2.687E-01	0.106
K-40	1.160E+01		4.547E+01	2.252E+02	4.818E+00	0.052
SC-46	5.750E+00		4.475E+00	2.129E+01	4.453E-01	0.270
CR-51	-9.124E+01		7.796E+01	2.623E+02	5.247E+00	-0.348
MN-54	-5.454E+00		5.049E+00	1.756E+01	3.600E-01	-0.311
CO-57	-3.219E+01		1.019E+02	3.588E+02	7.402E+00	-0.090
CO-58	2.818E+00		3.459E+00	1.693E+01	3.464E-01	0.166
FE-59	1.728E-01		6.353E+00	2.821E+01	5.889E-01	0.006
CO-60	2.488E+00		3.356E+00	1.625E+01	3.448E-01	0.153
ZN-65	-2.504E+00		7.079E+00	2.908E+01	6.079E-01	-0.086
SE-75	-2.657E+01		1.540E+01	4.948E+01	9.925E-01	-0.537
SR-85	-2.405E+01		1.173E+01	3.690E+01	7.414E-01	-0.652
Y-88	-3.821E-02		2.120E+00	1.088E+01	2.384E-01	-0.004
NB-94	9.209E+00		4.824E+00	2.307E+01	4.742E-01	0.399
NB-95	5.782E+00		4.665E+00	2.214E+01	4.516E-01	0.261
TC-95M	2.191E+01		1.638E+01	6.423E+01	1.298E+00	0.341
ZR-95	2.615E+00		5.652E+00	2.734E+01	5.574E-01	0.096
ZRNB-95	1.128E+01		8.884E+00	4.220E+01	8.609E-01	0.267
MO-99	6.925E+01		5.507E+01	2.112E+02	4.350E+00	0.328
RH-101	1.374E+01		1.374E+01	5.575E+01	1.128E+00	0.246
RH-102M	-1.268E+00		6.244E+00	2.380E+01	4.773E-01	-0.053
RU-103	-1.139E+01		6.318E+00	1.946E+01	3.906E-01	-0.585
RU-106DA	-3.792E+01		4.711E+01	1.695E+02	3.426E+00	-0.224
AG-108M	-5.304E+00		6.652E+00	2.393E+01	4.792E-01	-0.222
AG-110M	3.258E+00		6.992E+00	2.929E+01	6.025E-01	0.111
SN-113DA	-7.198E+00		9.437E+00	3.430E+01	6.861E-01	-0.210

---- Non-Identified Nuclides ----

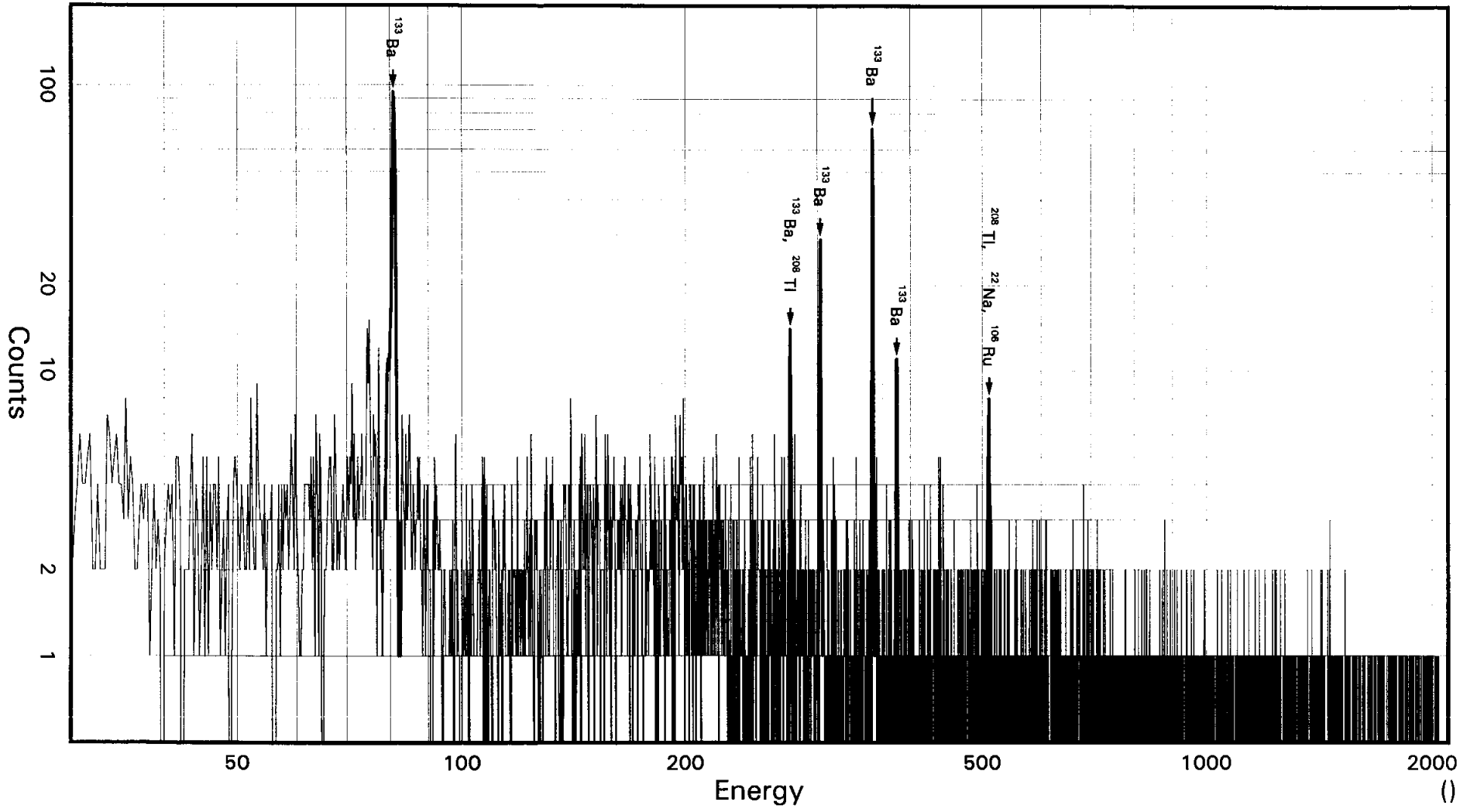
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	7.031E-01		7.579E+00	2.874E+01	5.803E-01	0.024
SB-125	1.006E+01		1.957E+01	8.026E+01	1.607E+00	0.125
SN-126DA	7.838E-01		4.505E+00	1.886E+01	3.823E-01	0.042
I-131	-1.393E+01		1.279E+01	4.494E+01	8.987E-01	-0.310
CS-134	7.173E+00		4.570E+00	2.276E+01	4.654E-01	0.315
CS-137DA	1.575E+00		4.484E+00	1.989E+01	4.030E-01	0.079
LA-138	9.442E-01		4.243E+00	2.039E+01	4.356E-01	0.046
CE-139	2.025E+00		1.322E+01	4.913E+01	1.002E+00	0.041
BA-140	6.470E+00		2.632E+01	1.086E+02	2.185E+00	0.060
BALA-140	-7.873E+00		1.142E+01	4.374E+01	9.443E-01	-0.180
LA-140	-1.146E+01		4.961E+01	2.064E+02	4.456E+00	-0.056
CE-141	1.794E+01		2.189E+01	8.364E+01	1.719E+00	0.214
CE-144	8.707E+01		9.733E+01	3.686E+02	7.616E+00	0.236
CEPR-144	1.762E+02		1.948E+02	7.380E+02	1.525E+01	0.239
PM-144	-3.044E+00		4.333E+00	1.597E+01	3.228E-01	-0.191
PM-146	4.254E+00		8.840E+00	3.606E+01	7.227E-01	0.118
EU-152	-4.496E-01		2.477E+01	9.340E+01	1.868E+00	-0.005
EU-154	3.787E+00		6.696E+00	3.568E+01	7.540E-01	0.106
EU-155	-1.953E+01		4.650E+01	1.654E+02	3.480E+00	-0.118
HF-181	-6.806E+00		8.096E+00	2.879E+01	5.775E-01	-0.236
BI-207	5.784E+00		4.347E+00	2.047E+01	4.125E-01	0.283
TL-208	2.926E+00		4.430E+00	2.024E+01	4.081E-01	0.145
BI-210M	-1.045E+01		1.606E+01	5.678E+01	1.139E+00	-0.184
BI-212	-4.535E+01		7.245E+01	2.722E+02	8.319E+00	-0.167
PB-212	-2.689E+01		2.216E+01	7.470E+01	1.502E+00	-0.360
BI-214	-1.133E+00		1.221E+01	4.685E+01	9.463E-01	-0.024
PB-214	-8.988E+00		2.616E+01	7.793E+01	1.559E+00	-0.115
RA-223	6.831E+00		5.648E+01	2.128E+02	4.268E+00	0.032
RA-224DA	-2.706E+01		2.229E+01	7.516E+01	1.511E+00	-0.360
RA-226DA	-1.133E+00		1.221E+01	4.685E+01	9.463E-01	-0.024
AC-227DA	3.107E+01		8.401E+01	3.147E+02	6.330E+00	0.099
AC-228	1.918E+01		1.375E+01	6.787E+01	1.399E+00	0.283
RA-228DA	1.922E+01		1.378E+01	6.801E+01	1.402E+00	0.283
TH-228DA	8.195E+00		1.241E+01	5.667E+01	1.143E+00	0.145
TH-232DA	-5.771E+00		3.962E+01	1.542E+02	3.084E+00	-0.037
TH-234DA	8.231E+02		4.140E+02	2.470E+03	5.122E+01	0.333
U-234DA	4.689E+01		4.790E+01	1.852E+02	3.708E+00	0.253
U-235HP	-1.577E+02		9.729E+01	3.113E+02	6.403E+00	-0.507
NP-237DA	-2.797E+01		2.290E+01	7.638E+01	1.528E+00	-0.366
U-238DA	-8.988E+00		2.616E+01	7.793E+01	1.559E+00	-0.115
U-238DHP	2.308E+02		3.149E+02	1.190E+03	2.633E+01	0.194
AM-241HP	-6.053E+01		3.012E+01	9.655E+01	2.152E+00	-0.627

STL Richland WA.

BA133

Sample ID: H57111AC
Detector ID: GER12 1

Batch ID: 6146445



Acquisition Start: 19-JUN-2006 15:01:46.75
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.25233E+01
Slope: 2.47509E-01
Quadrature: -2.00961E-09

SAMPLE IDENTIFICATION: H57111AC

CONFIGURATION ID: GER12:H57111AC_190661501
TITLE : BA133
SAMPLE ID : H57111AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 15:01:46
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:53.77
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.2523E+01 keV
ENERGY SLOPE: 2.4751E-01 keV/C
ENERGY Q COEFF: -.2010E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0884E-01 keV
FWHM SLOPE: 3.5936E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 2.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 15:32:10

Configuration : $DISK1:[GER12.SAMPLE]H57111AC_190661501.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:01:46
Sample ID : H57111AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.34 0.0%
Start energy : 12.77 End energy : 2039.98
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.84	320	44	0.74	276.02	268	16	1.78E-01	7.3	
2	0	276.47	56	21	0.80	1066.43	1058	17	3.09E-02	23.3	
3	0	302.81	143	13	1.08	1172.86	1165	17	7.93E-02	10.2	
4	0	356.08	350	36	1.16	1388.08	1379	22	1.94E-01	6.8	
5	0	383.71	65	5	1.44	1499.70	1490	16	3.63E-02	14.2	
6	0	437.32	19	4	0.80	1716.32	1707	15	1.05E-02	32.2	
7	0	510.97*	10	5	3.26	2013.87	2003	22	5.77E-03	94.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 15:32:10

Configuration : $DISK1:[GER12.SAMPLE]H57111AC_190661501.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:01:46
Sample ID : H57111AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.34 0.0%
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	320	33.00	2.899E+00	1.116E+03	1.118E+03	9.07
	276.40	56	6.90	3.105E+00	8.642E+02	8.652E+02	23.90
	302.84	143	17.80	3.109E+00	8.596E+02	8.605E+02	11.50
	356.00	350	62.05*	3.111E+00	6.036E+02	6.043E+02	8.69
	383.85	65	8.70	3.111E+00	8.045E+02	8.054E+02	15.18

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H57111AC
Acquisition date : 19-JUN-2006 15:01:46

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	437.32	19	4	0.80	1716.32	1707	15	1.05E-02	32.2	3.11E+00	
0	510.97	10	5	3.26	2013.87	2003	22	5.77E-03	94.7	3.10E+00	T

Flags: "T" = Tentatively associated

Sample ID : H57111AC Acquisition date : 19-JUN-2006 15:01:46

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.01	511.00	179.68	6.251E+00	94.82	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
RU-106DA	368.20D	0.02	511.85	20.60	5.491E+01	94.82	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
TL-208	1.41E+10Y	0.00	277.35	6.80	8.769E+02	23.90	Abun.
			510.84	21.60	5.177E+01	94.82	
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		22.71			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 15:32:12

Configuration : $DISK1:[GER12.SAMPLE]H57111AC_190661501.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:01:46
Sample ID : H57111AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.34 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.043E+02	5.248E+01	4.287E+01	8.574E-01	14.097

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	3.850E+01		5.285E+01	2.156E+02	4.323E+00	0.179
NA-22	-2.384E+00		2.829E+00	1.053E+01	2.219E-01	-0.226
K-40	-3.978E+01		4.742E+01	2.217E+02	4.729E+00	-0.179
SC-46	1.312E+00		3.860E+00	1.657E+01	3.458E-01	0.079
CR-51	-4.279E+01		5.479E+01	1.936E+02	3.874E+00	-0.221
MN-54	-8.583E+00		4.104E+00	1.196E+01	2.449E-01	-0.718
CO-57	-4.890E+01		6.666E+01	2.341E+02	4.823E+00	-0.209
CO-58	6.393E+00		3.921E+00	1.889E+01	3.861E-01	0.338
FE-59	4.608E+00		6.794E+00	3.062E+01	6.380E-01	0.150
CO-60	-2.384E+00		3.714E+00	1.384E+01	2.927E-01	-0.172
ZN-65	-6.442E+00		5.833E+00	2.079E+01	4.336E-01	-0.310
SE-75	1.879E+01		1.125E+01	4.667E+01	9.361E-01	0.403
SR-85	9.346E+00		6.279E+00	2.431E+01	4.883E-01	0.384
Y-88	1.941E-02		1.717E+00	8.996E+00	1.962E-01	0.002
NB-94	5.770E-02		3.458E+00	1.440E+01	2.956E-01	0.004
NB-95	-4.986E+00		4.375E+00	1.548E+01	3.154E-01	-0.322
TC-95M	2.191E+01		1.226E+01	5.021E+01	1.014E+00	0.436
ZR-95	1.491E+00		7.183E+00	2.972E+01	6.053E-01	0.050
ZRNB-95	-9.152E+00		8.319E+00	2.960E+01	6.032E-01	-0.309
MO-99	9.483E+00		3.858E+01	1.515E+02	3.116E+00	0.063
RH-101	2.797E+01		1.317E+01	5.347E+01	1.081E+00	0.523
RH-102M	-1.026E+00		5.346E+00	2.013E+01	4.038E-01	-0.051
RU-103	-4.743E+00		6.036E+00	2.134E+01	4.284E-01	-0.222
RU-106DA	2.981E+01		5.043E+01	2.068E+02	4.179E+00	0.144
AG-108M	3.857E+00		6.247E+00	2.245E+01	4.495E-01	0.172
AG-110M	3.121E+00		5.332E+00	2.313E+01	4.752E-01	0.135
SN-113DA	-3.841E-01		7.444E+00	2.915E+01	5.832E-01	-0.013

Sample ID : H57111AC Acquisition date : 19-JUN-2006 15:01:46

---- Non-Identified Nuclides ----

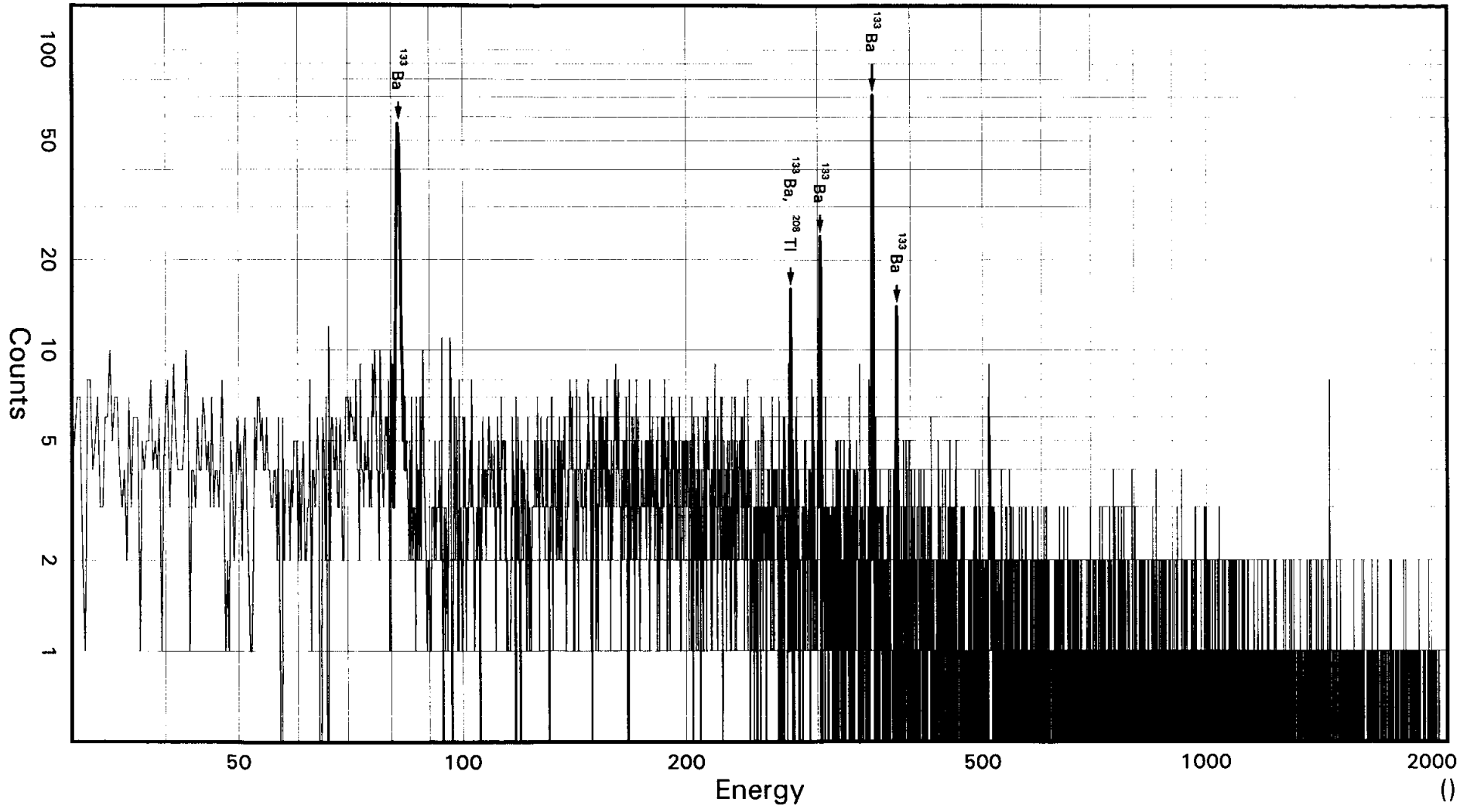
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-8.376E+00		5.061E+00	1.630E+01	3.290E-01	-0.514
SB-125	-1.205E+01		1.587E+01	5.728E+01	1.147E+00	-0.210
SN-126DA	-1.155E+00		3.280E+00	1.303E+01	2.639E-01	-0.089
I-131	-1.337E+01		1.131E+01	3.922E+01	7.845E-01	-0.341
CS-134	8.096E+00		3.706E+00	1.960E+01	4.003E-01	0.413
CS-137DA	3.736E+00		5.283E+00	2.220E+01	4.494E-01	0.168
LA-138	-3.294E+00		3.362E+00	1.257E+01	2.677E-01	-0.262
CE-139	1.087E+01		1.106E+01	4.188E+01	8.535E-01	0.259
BA-140	-1.043E+01		2.304E+01	8.873E+01	1.784E+00	-0.118
BALA-140	-1.640E-01		8.308E+00	3.619E+01	7.782E-01	-0.005
LA-140	-7.482E-01		3.771E+01	1.642E+02	3.532E+00	-0.005
CE-141	2.550E+01		1.965E+01	7.650E+01	1.570E+00	0.333
CE-144	2.639E+01		6.444E+01	2.469E+02	5.092E+00	0.107
CEPR-144	5.362E+01		1.290E+02	4.941E+02	1.019E+01	0.109
PM-144	1.137E+00		3.635E+00	1.553E+01	3.136E-01	0.073
PM-146	7.947E+00		5.976E+00	2.736E+01	5.482E-01	0.290
EU-152	8.093E+00		2.110E+01	8.390E+01	1.678E+00	0.096
EU-154	-6.690E+00		7.940E+00	2.955E+01	6.227E-01	-0.226
EU-155	-2.817E+01		3.548E+01	1.260E+02	2.642E+00	-0.224
HF-181	9.033E-01		6.692E+00	2.600E+01	5.216E-01	0.035
BI-207	4.784E-01		3.464E+00	1.473E+01	2.967E-01	0.032
TL-208	1.040E+01		5.413E+00	2.492E+01	5.024E-01	0.417
BI-210M	-3.472E+01		1.474E+01	4.450E+01	8.925E-01	-0.780
BI-212	2.947E+01		5.843E+01	2.484E+02	7.587E+00	0.119
PB-212	-1.629E+01		1.233E+01	4.169E+01	8.380E-01	-0.391
BI-214	2.370E+01		1.191E+01	5.239E+01	1.058E+00	0.452
PB-214	-2.302E+00		1.676E+01	5.480E+01	1.096E+00	-0.042
RA-223	2.045E+01		5.190E+01	1.967E+02	3.943E+00	0.104
RA-224DA	-1.639E+01		1.240E+01	4.194E+01	8.432E-01	-0.391
RA-226DA	2.370E+01		1.191E+01	5.239E+01	1.058E+00	0.452
AC-227DA	2.828E+01		5.664E+01	2.207E+02	4.438E+00	0.128
AC-228	3.614E+01		1.340E+01	6.953E+01	1.431E+00	0.520
RA-228DA	3.622E+01		1.343E+01	6.967E+01	1.434E+00	0.520
TH-228DA	2.913E+01		1.516E+01	6.980E+01	1.407E+00	0.417
TH-232DA	3.665E+01		4.279E+01	1.735E+02	3.471E+00	0.211
TH-234DA	-2.188E+02		5.215E+02	2.032E+03	4.206E+01	-0.108
U-234DA	9.981E+00		3.232E+01	1.233E+02	2.468E+00	0.081
U-235HP	-6.268E+01		7.065E+01	2.432E+02	4.995E+00	-0.258
NP-237DA	-1.851E+01		1.591E+01	5.323E+01	1.065E+00	-0.348
U-238DA	-2.302E+00		1.676E+01	5.480E+01	1.096E+00	-0.042
U-238DHP	1.250E+02		2.365E+02	8.788E+02	1.935E+01	0.142
AM-241HP	2.033E+01		2.406E+01	9.180E+01	2.035E+00	0.221

STL Richland WA.

BA133

Sample ID: H57121AC
Detector ID: GER13 1

Batch ID: 6146445



Acquisition Start: 19-JUN-2006 15:02:04.83
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -6.10701E-01
Slope: 2.50772E-01
Quadrature: -1.04651E-07

SAMPLE IDENTIFICATION: H57121AC

CONFIGURATION ID: GER13:H57121AC_190661502
TITLE : BA133
SAMPLE ID : H57121AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 15:02:04
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:44:45.22
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.6107E+00 keV
ENERGY SLOPE: 2.5077E-01 keV/C
ENERGY Q COEFF: -.1047E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.1661E-01 keV
FWHM SLOPE: 4.3284E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 15:32:25

Configuration	: $DISK1:[GER13.SAMPLE]H57121AC_190661502.CNF;1		
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6		
Sample title	: BA133		
Sample date	: 13-JUN-2006 12:00:00	Acquisition date	: 19-JUN-2006 15:02:04
Sample ID	: H57121AC	Sample quantity	: 1.0000 SAMPL
Sample type	:	Sample geometry	: BA133T15
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.36 0.0%
Start energy	: 19.45	End energy	: 2046.69
Sensitivity	: 5.00	Gaussian	: 10.00
Critical level	: No		

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.99	187	90	0.89	329.45	323	14	1.04E-01	13.2	
2	0	96.17	23	10	0.49	385.98	381	8	1.27E-02	31.8	
3	0	276.39	67	24	1.30	1105.12	1095	19	3.74E-02	21.2	
4	0	302.76	95	29	0.87	1210.35	1202	14	5.28E-02	15.7	
5	0	355.92	315	27	1.08	1422.57	1415	19	1.75E-01	6.9	
6	0	383.79	48	20	0.84	1533.87	1525	16	2.67E-02	25.3	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 15:32:25

Configuration : $DISK1:[GER13.SAMPLE]H57121AC_190661502.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:02:04
Sample ID : H57121AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.36 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	187	33.00	2.705E+00	6.975E+02	6.983E+02	14.28
	276.40	67	6.90	2.897E+00	1.123E+03	1.124E+03	21.88
	302.84	95	17.80	2.900E+00	6.134E+02	6.140E+02	16.58
	356.00	315	62.05*	2.903E+00	5.838E+02	5.845E+02	8.77
	383.85	48	8.70	2.902E+00	6.337E+02	6.344E+02	25.91

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H57121AC

Acquisition date : 19-JUN-2006 15:02:04

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	96.17	23	10	0.49	385.98	381	8	1.27E-02	31.8	2.74E+00	

Flags: "T" = Tentatively associated

Sample ID : H57121AC
Acquisition date : 19-JUN-2006 15:02:04

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	1.139E+03	21.88	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 15:32:27

Configuration : $DISK1:[GER13.SAMPLE]H57121AC_190661502.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:02:04
Sample ID : H57121AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.36 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	5.845E+02	5.127E+01	5.010E+01	1.002E+00	11.666

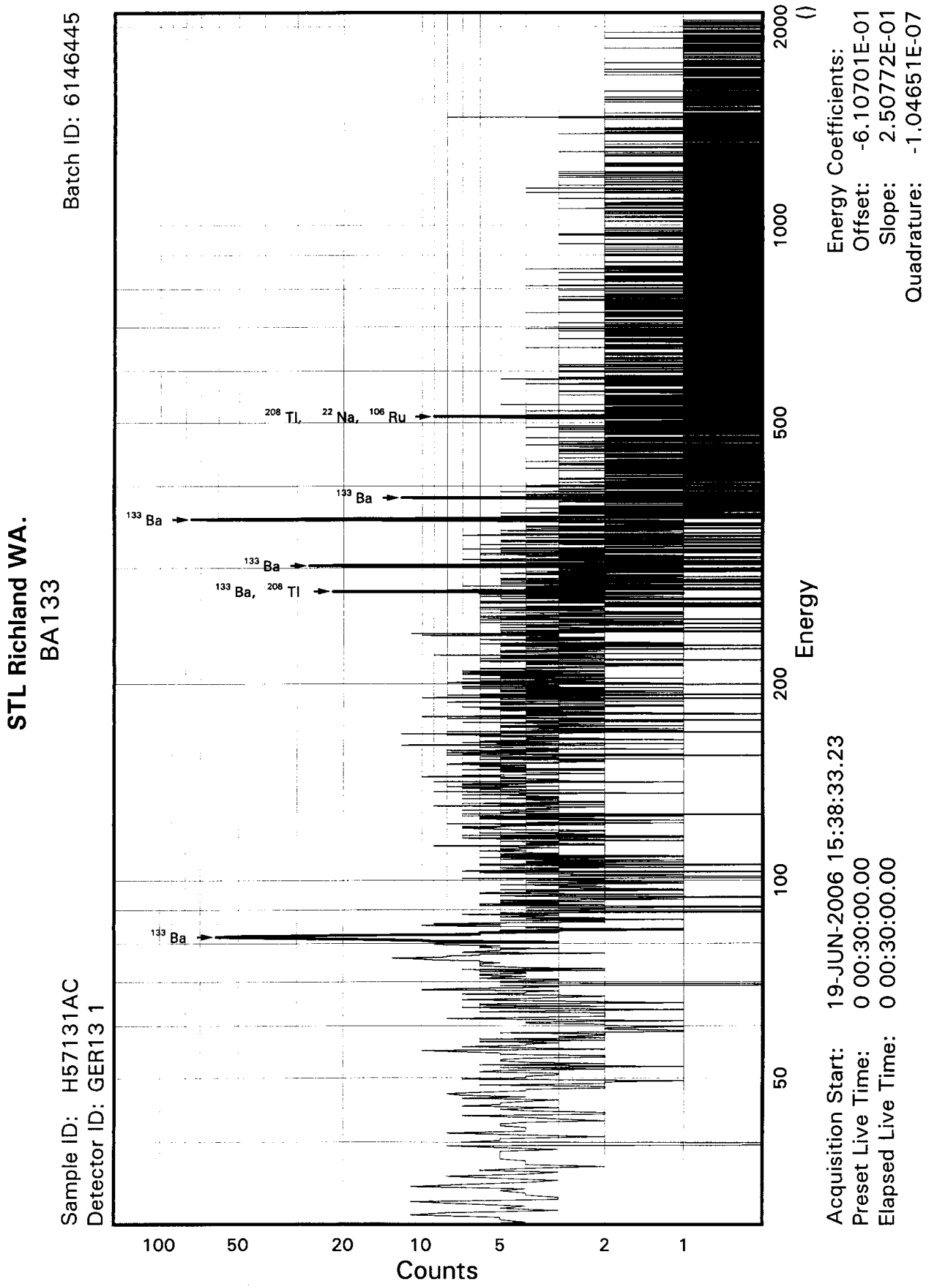
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-6.102E+01		5.834E+01	2.008E+02	4.027E+00	-0.304
NA-22	1.192E-01		4.165E+00	1.712E+01	3.611E-01	0.007
K-40	-8.146E+01		9.933E+01	4.572E+02	9.762E+00	-0.178
SC-46	-4.869E+00		6.111E+00	2.322E+01	4.848E-01	-0.210
CR-51	5.636E+01		1.052E+02	3.931E+02	7.864E+00	0.143
MN-54	7.167E+00		4.475E+00	2.076E+01	4.251E-01	0.345
CO-57	1.044E+02		1.003E+02	3.847E+02	7.929E+00	0.271
CO-58	-9.830E+00		4.994E+00	1.506E+01	3.079E-01	-0.653
FE-59	9.227E+00		9.361E+00	4.057E+01	8.460E-01	0.227
CO-60	6.104E+00		3.667E+00	1.828E+01	3.872E-01	0.334
ZN-65	8.763E+00		8.952E+00	3.947E+01	8.240E-01	0.222
SE-75	-1.097E+00		1.655E+01	6.019E+01	1.207E+00	-0.018
SR-85	-1.228E+01		1.081E+01	3.594E+01	7.220E-01	-0.342
Y-88	2.705E+00		3.189E+00	1.577E+01	3.444E-01	0.172
NB-94	-1.352E+00		5.440E+00	2.052E+01	4.213E-01	-0.066
NB-95	-5.226E+00		7.509E+00	2.694E+01	5.494E-01	-0.194
TC-95M	1.197E+01		1.701E+01	6.271E+01	1.267E+00	0.191
ZR-95	2.165E+00		1.053E+01	4.181E+01	8.520E-01	0.052
ZRNB-95	-1.503E+01		1.460E+01	5.081E+01	1.036E+00	-0.296
MO-99	8.020E+01		5.579E+01	2.161E+02	4.446E+00	0.371
RH-101	-2.772E+01		1.541E+01	4.937E+01	9.985E-01	-0.562
RH-102M	-1.464E+00		5.888E+00	2.206E+01	4.423E-01	-0.066
RU-103	4.437E+00		8.487E+00	3.281E+01	6.586E-01	0.135
RU-106DA	2.621E+01		4.168E+01	1.814E+02	3.664E+00	0.144
AG-108M	-7.601E+00		7.381E+00	2.553E+01	5.112E-01	-0.298
AG-110M	1.430E+00		6.461E+00	2.621E+01	5.387E-01	0.055
SN-113DA	-1.639E+00		1.214E+01	4.498E+01	8.998E-01	-0.036

Sample ID : H57121AC Acquisition date : 19-JUN-2006 15:02:04

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	5.336E+00		6.441E+00	2.633E+01	5.314E-01	0.203
SB-125	-1.251E+01		2.477E+01	8.915E+01	1.785E+00	-0.140
SN-126DA	-5.541E+00		5.955E+00	2.071E+01	4.195E-01	-0.268
I-131	3.921E+00		1.694E+01	6.229E+01	1.246E+00	0.063
CS-134	4.313E+00		5.311E+00	2.300E+01	4.699E-01	0.188
CS-137DA	5.926E+00		5.918E+00	2.521E+01	5.105E-01	0.235
LA-138	-1.849E-01		5.256E+00	2.203E+01	4.695E-01	-0.008
CE-139	1.487E+01		1.303E+01	4.983E+01	1.016E+00	0.298
BA-140	4.795E+01		3.366E+01	1.409E+02	2.834E+00	0.340
BALA-140	1.367E-01		8.790E+00	3.884E+01	8.365E-01	0.004
LA-140	6.168E-01		3.989E+01	1.763E+02	3.796E+00	0.003
CE-141	-3.672E+01		2.561E+01	8.635E+01	1.773E+00	-0.425
CE-144	4.696E+01		1.011E+02	3.638E+02	7.509E+00	0.129
CEPR-144	9.836E+01		2.025E+02	7.292E+02	1.505E+01	0.135
PM-144	-4.620E+00		4.094E+00	1.426E+01	2.881E-01	-0.324
PM-146	1.464E+01		1.155E+01	4.620E+01	9.257E-01	0.317
EU-152	-5.235E+01		3.320E+01	1.070E+02	2.140E+00	-0.489
EU-154	-8.983E-01		1.151E+01	4.684E+01	9.882E-01	-0.019
EU-155	-1.293E+01		4.844E+01	1.712E+02	3.596E+00	-0.075
HF-181	8.874E-01		8.056E+00	3.078E+01	6.175E-01	0.029
BI-207	1.035E+01		6.461E+00	2.741E+01	5.523E-01	0.378
TL-208	5.447E+00		8.063E+00	3.392E+01	6.838E-01	0.161
BI-210M	6.864E-01		1.899E+01	6.943E+01	1.392E+00	0.010
BI-212	4.388E+01		8.712E+01	3.455E+02	1.055E+01	0.127
PB-212	-1.263E+01		2.587E+01	9.154E+01	1.840E+00	-0.138
BI-214	-4.672E+00		1.438E+01	5.979E+01	1.207E+00	-0.078
PB-214	1.851E+01		2.480E+01	8.946E+01	1.789E+00	0.207
RA-223	-1.185E+02		7.169E+01	2.362E+02	4.737E+00	-0.502
RA-224DA	-1.270E+01		2.602E+01	9.210E+01	1.852E+00	-0.138
RA-226DA	-4.772E+00		1.438E+01	5.974E+01	1.206E+00	-0.080
AC-227DA	2.373E+01		1.012E+02	3.581E+02	7.201E+00	0.066
AC-228	-5.113E+01		2.071E+01	7.106E+01	1.463E+00	-0.719
RA-228DA	-5.123E+01		2.075E+01	7.121E+01	1.466E+00	-0.719
TH-228DA	1.525E+01		2.258E+01	9.498E+01	1.915E+00	0.161
TH-232DA	1.019E+02		8.152E+01	3.121E+02	6.243E+00	0.327
TH-234DA	-8.569E+02		7.418E+02	2.578E+03	5.341E+01	-0.332
U-234DA	1.380E+01		5.218E+01	1.925E+02	3.855E+00	0.072
U-235HP	1.096E+02		9.841E+01	3.779E+02	7.766E+00	0.290
NP-237DA	1.606E+00		2.238E+01	8.242E+01	1.649E+00	0.019
U-238DA	1.851E+01		2.480E+01	8.946E+01	1.789E+00	0.207
U-238DHP	3.549E+01		2.695E+02	1.004E+03	2.214E+01	0.035
AM-241HP	-1.363E+00		2.945E+01	1.033E+02	2.295E+00	-0.013


STL Richland WA.
BA133
Batch ID: 6146445
Sample ID: H57131AC
Detector ID: GER13 1
133 Ba
133 Ba, 208 Tl
133 Ba
133 Ba
208 Tl, 22 Na, 106 Ru
Counts
100
50
20
10
5
2
1
Energy
50
100
200
500
1000
2000
()
Acquisition Start: 19-JUN-2006 15:38:33.23
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00
Energy Coefficients:
Offset: -6.10701E-01
Slope: 2.50772E-01
Quadrature: -1.04651E-07

SAMPLE IDENTIFICATION: H57131AC

CONFIGURATION ID: GER13:H57131AC_190661538
TITLE : BA133
SAMPLE ID : H57131AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 15:38:33
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:44:45.22
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.6107E+00 keV
ENERGY SLOPE: 2.5077E-01 keV/C
ENERGY Q COEFF: -.1047E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.1661E-01 keV
FWHM SLOPE: 4.3284E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 16:08:50

```
Configuration     : $DISK1:[GER13.SAMPLE]H57131AC_190661538.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:38:33
Sample ID         : H57131AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.38   0.0%
Start energy      :    19.45             End energy       :  2046.69
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.92	210	51	0.76	329.13	323	15	1.17E-01	10.3	
2	0	276.65	74	31	0.46	1106.16	1096	19	4.09E-02	22.0	
3	0	302.65	105	36	1.13	1209.90	1203	15	5.81E-02	16.0	
4	0	355.76	390	20	1.21	1421.93	1410	20	2.17E-01	5.8	
5	0	383.86	48	7	0.91	1534.15	1528	13	2.64E-02	18.2	
6	0	510.76*	5	7	1.73	2040.92	2030	25	2.81E-03	217.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 16:08:51

Configuration : $DISK1:[GER13.SAMPLE]H57131AC_190661538.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:38:33
Sample ID : H57131AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.38 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	210	33.00	2.704E+00	7.846E+02	7.854E+02	11.69
	276.40	74	6.90	2.897E+00	1.227E+03	1.229E+03	22.68
	302.84	105	17.80	2.900E+00	6.756E+02	6.763E+02	16.92
	356.00	390	62.05*	2.903E+00	7.217E+02	7.225E+02	7.91
	383.85	48	8.70	2.902E+00	6.270E+02	6.277E+02	19.03

Flag: "*" = Keyline

Sample ID : H57131AC Acquisition date : 19-JUN-2006 15:38:33

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	510.76	5	7	1.73	2040.92	2030	25	2.81E-03	****	2.89E+00	T

Flags: "T" = Tentatively associated

Sample ID : H57131AC Acquisition date : 19-JUN-2006 15:38:33

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.01	511.00	179.68	3.265E+00	217.76	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
RU-106DA	368.20D	0.02	511.85	20.60	2.868E+01	217.76	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
TL-208	1.41E+10Y	0.00	277.35	6.80	1.245E+03	22.68	Abun.
			510.84	21.60	2.703E+01	217.76	
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		22.71			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 16:08:53

Configuration : $DISK1:[GER13.SAMPLE]H57131AC_190661538.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:38:33
Sample ID : H57131AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.38 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.225E+02	5.713E+01	4.381E+01	8.762E-01	16.493

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-1.695E+02		6.284E+01	1.712E+02	3.433E+00	-0.990
NA-22	4.920E+00		4.516E+00	2.021E+01	4.263E-01	0.243
K-40	-1.464E+02		9.717E+01	4.414E+02	9.425E+00	-0.332
SC-46	4.226E+00		6.987E+00	2.872E+01	5.998E-01	0.147
CR-51	1.641E+02		1.089E+02	4.250E+02	8.502E+00	0.386
MN-54	-2.135E+00		5.608E+00	2.091E+01	4.283E-01	-0.102
CO-57	-6.515E+01		1.126E+02	3.980E+02	8.203E+00	-0.164
CO-58	1.139E+01		6.022E+00	2.672E+01	5.463E-01	0.426
FE-59	6.321E+00		8.354E+00	3.648E+01	7.606E-01	0.173
CO-60	3.200E+00		3.135E+00	1.547E+01	3.276E-01	0.207
ZN-65	-1.627E+01		1.176E+01	3.892E+01	8.125E-01	-0.418
SE-75	-3.457E+01		1.622E+01	5.162E+01	1.035E+00	-0.670
SR-85	1.011E+01		8.372E+00	2.989E+01	6.005E-01	0.338
Y-88	-2.511E+00		2.573E+00	9.660E+00	2.110E-01	-0.260
NB-94	-3.678E+00		4.607E+00	1.661E+01	3.411E-01	-0.221
NB-95	-4.181E+00		7.381E+00	2.681E+01	5.467E-01	-0.156
TC-95M	-1.905E+01		1.872E+01	6.273E+01	1.267E+00	-0.304
ZR-95	8.730E-01		1.085E+01	4.242E+01	8.645E-01	0.021
ZRNB-95	-2.769E+00		1.356E+01	5.092E+01	1.038E+00	-0.054
MO-99	5.358E+01		6.153E+01	2.307E+02	4.747E+00	0.232
RH-101	1.768E+01		1.532E+01	5.731E+01	1.159E+00	0.309
RH-102M	6.060E+00		6.152E+00	2.531E+01	5.076E-01	0.239
RU-103	5.106E+00		8.289E+00	3.238E+01	6.499E-01	0.158
RU-106DA	-5.905E+01		5.211E+01	1.797E+02	3.631E+00	-0.329
AG-108M	-8.781E+00		7.059E+00	2.394E+01	4.794E-01	-0.367
AG-110M	-1.479E+00		6.524E+00	2.518E+01	5.175E-01	-0.059
SN-113DA	7.611E+00		1.154E+01	4.523E+01	9.050E-01	0.168

Sample ID : H57131AC Acquisition date : 19-JUN-2006 15:38:33

---- Non-Identified Nuclides ----

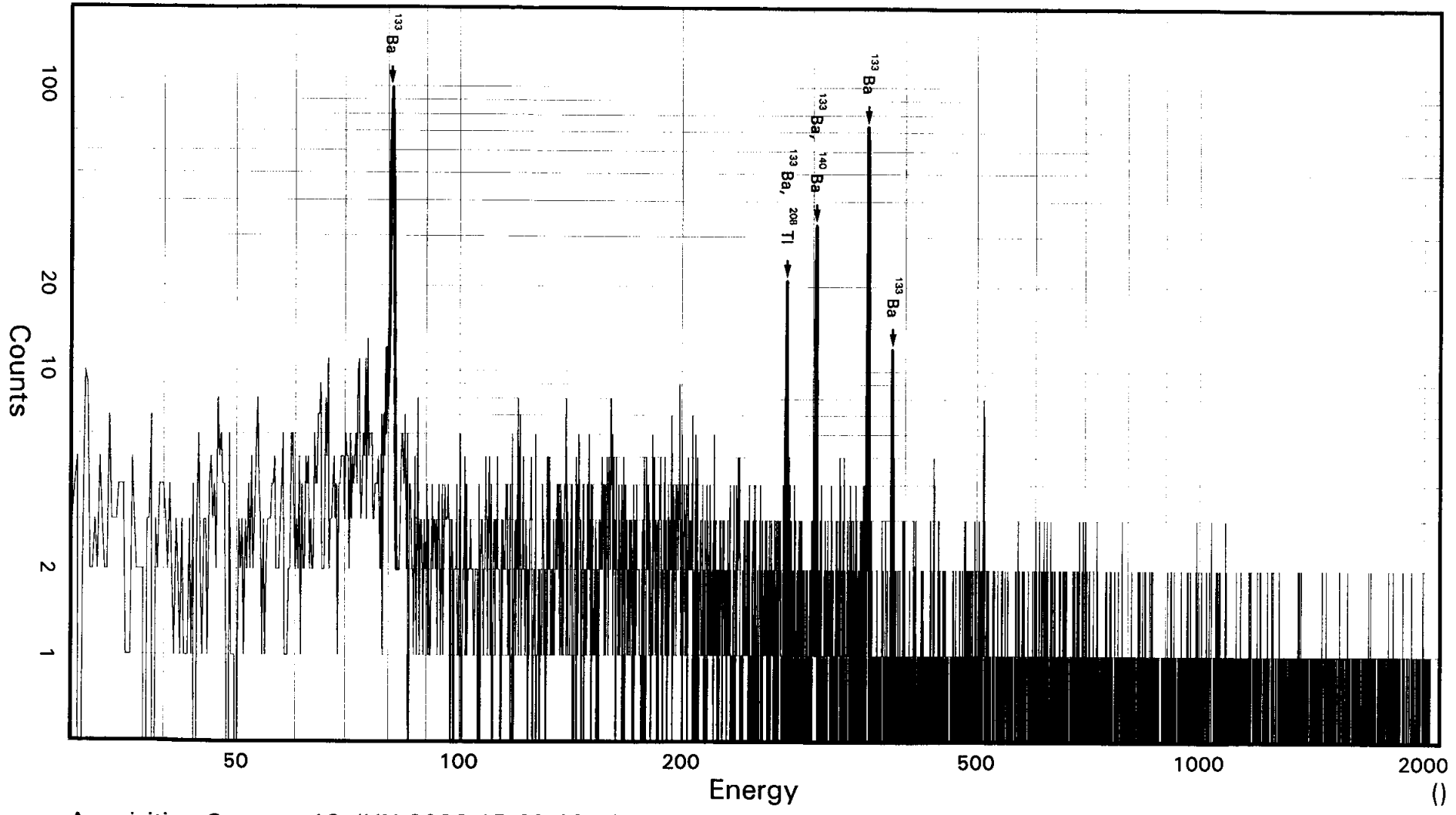
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-1.283E+00		6.271E+00	2.371E+01	4.786E-01	-0.054
SB-125	-1.393E+01		2.275E+01	8.175E+01	1.637E+00	-0.170
SN-126DA	-2.599E+00		5.518E+00	2.026E+01	4.104E-01	-0.128
I-131	1.653E+00		1.682E+01	6.136E+01	1.227E+00	0.027
CS-134	-1.751E+00		6.188E+00	2.354E+01	4.809E-01	-0.074
CS-137DA	-7.157E+00		6.634E+00	2.276E+01	4.611E-01	-0.314
LA-138	1.650E+00		5.568E+00	2.404E+01	5.125E-01	0.069
CE-139	-1.576E+01		1.495E+01	5.087E+01	1.037E+00	-0.310
BA-140	-1.298E+01		3.706E+01	1.335E+02	2.685E+00	-0.097
BALA-140	9.127E-02		7.187E+00	3.355E+01	7.226E-01	0.003
LA-140	4.155E-01		3.292E+01	1.537E+02	3.309E+00	0.003
CE-141	1.868E+01		2.716E+01	1.012E+02	2.077E+00	0.185
CE-144	-6.600E+01		1.048E+02	3.538E+02	7.302E+00	-0.187
CEPR-144	-1.338E+02		2.094E+02	7.068E+02	1.459E+01	-0.189
PM-144	-1.355E-01		4.691E+00	1.860E+01	3.758E-01	-0.007
PM-146	1.062E+01		1.150E+01	4.514E+01	9.046E-01	0.235
EU-152	-4.587E+01		3.476E+01	1.144E+02	2.287E+00	-0.401
EU-154	1.134E+01		1.233E+01	5.475E+01	1.155E+00	0.207
EU-155	-3.548E+01		4.859E+01	1.669E+02	3.505E+00	-0.213
HF-181	1.723E+01		7.849E+00	3.480E+01	6.982E-01	0.495
BI-207	6.552E+00		5.635E+00	2.395E+01	4.825E-01	0.274
TL-208	-4.410E+00		9.740E+00	3.681E+01	7.422E-01	-0.120
BI-210M	2.841E+01		1.780E+01	7.076E+01	1.419E+00	0.401
BI-212	3.214E+00		7.417E+01	2.900E+02	8.859E+00	0.011
PB-212	1.013E+01		2.554E+01	9.439E+01	1.898E+00	0.107
BI-214	-2.200E+01		1.463E+01	5.584E+01	1.127E+00	-0.394
PB-214	8.611E+00		2.201E+01	8.020E+01	1.604E+00	0.107
RA-223	-6.575E+01		6.986E+01	2.413E+02	4.839E+00	-0.272
RA-224DA	1.019E+01		2.570E+01	9.497E+01	1.909E+00	0.107
RA-226DA	-2.200E+01		1.463E+01	5.584E+01	1.127E+00	-0.394
AC-227DA	-9.433E+01		1.067E+02	3.553E+02	7.146E+00	-0.265
AC-228	-8.468E+00		1.835E+01	7.964E+01	1.640E+00	-0.106
RA-228DA	-8.485E+00		1.839E+01	7.981E+01	1.643E+00	-0.106
TH-228DA	-1.235E+01		2.728E+01	1.031E+02	2.079E+00	-0.120
TH-232DA	7.375E-04		7.767E+01	2.816E+02	5.633E+00	0.000
TH-234DA	9.871E+02		6.632E+02	3.086E+03	6.393E+01	0.320
U-234DA	3.867E+01		4.656E+01	1.794E+02	3.592E+00	0.216
U-235HP	1.558E+02		1.098E+02	4.208E+02	8.645E+00	0.370
NP-237DA	-6.281E+01		2.683E+01	8.242E+01	1.649E+00	-0.762
U-238DA	8.611E+00		2.201E+01	8.020E+01	1.604E+00	0.107
U-238DHP	-2.098E+02		2.617E+02	9.276E+02	2.046E+01	-0.226
AM-241HP	-4.562E+01		2.676E+01	8.294E+01	1.843E+00	-0.550

STL Richland WA.

BA133

Sample ID: H57141AC
Detector ID: GER12 1

Batch ID: 6146445



Acquisition Start: 19-JUN-2006 15:38:46.79
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.25233E+01
Slope: 2.47509E-01
Quadrature: -2.00961E-09

SAMPLE IDENTIFICATION: H57141AC

CONFIGURATION ID: GER12:H57141AC_190661538
TITLE : BA133
SAMPLE ID : H57141AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 15:38:46
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:53.77
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.2523E+01 keV
ENERGY SLOPE: 2.4751E-01 keV/C
ENERGY Q COEFF: -.2010E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0884E-01 keV
FWHM SLOPE: 3.5936E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 2.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 16:09:06

```
Configuration     : $DISK1:[GER12.SAMPLE]H57141AC_190661538.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:38:46
Sample ID         : H57141AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.33   0.0%
Start energy      :    12.77             End energy       :  2039.98
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.84	321	40	0.73	276.00	268	16	1.78E-01	7.1	
2	0	276.62	59	23	0.46	1067.04	1060	15	3.27E-02	21.9	
3	0	302.97	143	11	1.02	1173.48	1166	18	7.96E-02	10.2	
4	0	356.00	393	17	1.18	1387.73	1378	21	2.18E-01	5.6	
5	0	384.11	52	8	1.08	1501.32	1493	15	2.91E-02	17.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 16:09:06

Configuration : $DISK1:[GER12.SAMPLE]H57141AC_190661538.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:38:46
Sample ID : H57141AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.33 0.0%
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	321	33.00	2.899E+00	1.119E+03	1.120E+03	8.95
	276.40	59	6.90	3.105E+00	9.151E+02	9.161E+02	22.58
	302.84	143	17.80	3.109E+00	8.627E+02	8.636E+02	11.56
	356.00	393	62.05*	3.111E+00	6.789E+02	6.797E+02	7.80
	383.85	52	8.70	3.111E+00	6.448E+02	6.455E+02	18.72

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H57141AC

Acquisition date : 19-JUN-2006 15:38:46

None

Flags: "T" = Tentatively associated

Sample ID : H57141AC Acquisition date : 19-JUN-2006 15:38:46

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
BA-140	12.79D	0.48	162.64	6.70	--- Not Found ---		Abun.
			304.84	4.50	4.765E+03	11.56	
			423.70	3.20	--- Not Found ---		
			537.32*	25.00	--- Not Found ---		
		% Abundances Found =		11.42			
TL-208	1.41E+10Y	0.00	277.35	6.80	9.286E+02	22.58	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 16:09:08

Configuration : $DISK1:[GER12.SAMPLE]H57141AC_190661538.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:38:46
Sample ID : H57141AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.33 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.797E+02	5.303E+01	3.487E+01	6.974E-01	19.493

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-3.123E+01		4.186E+01	1.517E+02	3.042E+00	-0.206
NA-22	-7.009E+00		3.303E+00	8.343E+00	1.758E-01	-0.840
K-40	-4.402E+01		4.695E+01	2.192E+02	4.674E+00	-0.201
SC-46	-2.161E+00		4.021E+00	1.541E+01	3.215E-01	-0.140
CR-51	-9.043E+01		6.194E+01	1.992E+02	3.986E+00	-0.454
MN-54	4.164E+00		4.870E+00	2.057E+01	4.212E-01	0.202
CO-57	8.845E+01		7.391E+01	2.909E+02	5.993E+00	0.304
CO-58	1.252E-01		2.815E+00	1.259E+01	2.573E-01	0.010
FE-59	-3.954E+00		6.754E+00	2.609E+01	5.436E-01	-0.152
CO-60	2.174E+00		2.824E+00	1.363E+01	2.883E-01	0.160
ZN-65	6.944E+00		7.374E+00	3.362E+01	7.012E-01	0.207
SE-75	-5.708E+00		1.104E+01	3.966E+01	7.955E-01	-0.144
SR-85	-3.221E+01		8.931E+00	2.290E+01	4.600E-01	-1.407
Y-88	3.828E+00		3.252E+00	1.615E+01	3.523E-01	0.237
NB-94	5.196E-01		2.777E+00	1.245E+01	2.556E-01	0.042
NB-95	-7.504E+00		3.246E+00	7.568E+00	1.543E-01	-0.991
TC-95M	-1.261E+01		1.332E+01	4.658E+01	9.409E-01	-0.271
ZR-95	-8.980E+00		7.012E+00	2.312E+01	4.709E-01	-0.388
ZRNB-95	-1.448E+01		6.088E+00	1.337E+01	2.724E-01	-1.083
MO-99	-7.210E+00		4.015E+01	1.528E+02	3.142E+00	-0.047
RH-101	9.428E+00		1.216E+01	4.753E+01	9.612E-01	0.198
RH-102M	3.959E+00		4.557E+00	1.949E+01	3.909E-01	0.203
RU-103	2.255E-01		5.943E+00	2.304E+01	4.624E-01	0.010
RU-106DA	-1.583E+01		3.926E+01	1.520E+02	3.072E+00	-0.104
AG-108M	-8.513E+00		6.214E+00	2.069E+01	4.142E-01	-0.412
AG-110M	-4.602E+00		2.669E+00	4.167E+00	8.559E-02	-1.104
SN-113DA	1.070E+00		5.467E+00	2.327E+01	4.656E-01	0.046

Sample ID : H57141AC Acquisition date : 19-JUN-2006 15:38:46

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-5.718E+00		5.095E+00	1.770E+01	3.572E-01	-0.323
SB-125	1.728E+01		1.409E+01	6.309E+01	1.263E+00	0.274
SN-126DA	-3.311E+00		2.458E+00	7.982E+00	1.617E-01	-0.415
I-131	-6.989E+00		8.257E+00	3.036E+01	6.072E-01	-0.230
CS-134	1.451E+00		3.349E+00	1.546E+01	3.158E-01	0.094
CS-137DA	4.776E+00		4.007E+00	1.888E+01	3.823E-01	0.253
LA-138	3.546E+00		4.796E+00	2.240E+01	4.770E-01	0.158
CE-139	-4.789E+00		1.000E+01	3.504E+01	7.141E-01	-0.137
BA-140	-3.820E+01		2.240E+01	7.223E+01	1.452E+00	-0.529
BALA-140	-5.474E-02		4.804E+00	2.477E+01	5.327E-01	-0.002
LA-140	-4.547E+00		2.044E+01	1.027E+02	2.208E+00	-0.044
CE-141	7.117E+00		1.873E+01	6.988E+01	1.434E+00	0.102
CE-144	-5.639E+01		6.935E+01	2.416E+02	4.984E+00	-0.233
CEPR-144	-1.119E+02		1.388E+02	4.836E+02	9.977E+00	-0.231
PM-144	4.327E+00		4.645E+00	1.988E+01	4.016E-01	0.218
PM-146	-8.484E+00		5.566E+00	1.777E+01	3.562E-01	-0.477
EU-152	9.822E+00		2.261E+01	8.926E+01	1.785E+00	0.110
EU-154	-1.967E+01		9.268E+00	2.341E+01	4.934E-01	-0.840
EU-155	-3.202E+01		3.196E+01	1.122E+02	2.354E+00	-0.285
HF-181	1.065E+01		7.101E+00	3.034E+01	6.085E-01	0.351
BI-207	7.866E+00		3.969E+00	1.923E+01	3.873E-01	0.409
TL-208	-1.382E+00		3.725E+00	1.503E+01	3.029E-01	-0.092
BI-210M	8.024E+00		1.215E+01	4.797E+01	9.619E-01	0.167
BI-212	1.591E+02		6.237E+01	3.080E+02	9.409E+00	0.517
PB-212	5.335E+01		1.613E+01	7.084E+01	1.424E+00	0.753
BI-214	-1.625E+00		9.577E+00	3.730E+01	7.529E-01	-0.044
PB-214	6.430E+00		1.850E+01	6.300E+01	1.260E+00	0.102
RA-223	-2.965E+01		4.794E+01	1.703E+02	3.414E+00	-0.174
RA-224DA	5.368E+01		1.623E+01	7.127E+01	1.433E+00	0.753
RA-226DA	-1.435E+00		9.600E+00	3.745E+01	7.560E-01	-0.038
AC-227DA	-6.652E+01		5.938E+01	2.041E+02	4.104E+00	-0.326
AC-228	-1.608E+01		1.266E+01	4.280E+01	8.808E-01	-0.376
RA-228DA	-1.611E+01		1.269E+01	4.289E+01	8.826E-01	-0.376
TH-228DA	-3.871E+00		1.043E+01	4.208E+01	8.482E-01	-0.092
TH-232DA	3.247E+01		5.293E+01	2.029E+02	4.058E+00	0.160
TH-234DA	-4.216E+02		6.012E+02	2.202E+03	4.558E+01	-0.192
U-234DA	-1.080E+01		2.822E+01	1.034E+02	2.069E+00	-0.104
U-235HP	-1.020E+02		7.714E+01	2.559E+02	5.255E+00	-0.398
NP-237DA	1.589E+01		1.610E+01	6.502E+01	1.301E+00	0.244
U-238DA	6.430E+00		1.850E+01	6.300E+01	1.260E+00	0.102
U-238DHP	-3.201E+02		2.635E+02	8.701E+02	1.916E+01	-0.368
AM-241HP	3.259E+00		2.383E+01	8.728E+01	1.935E+00	0.037

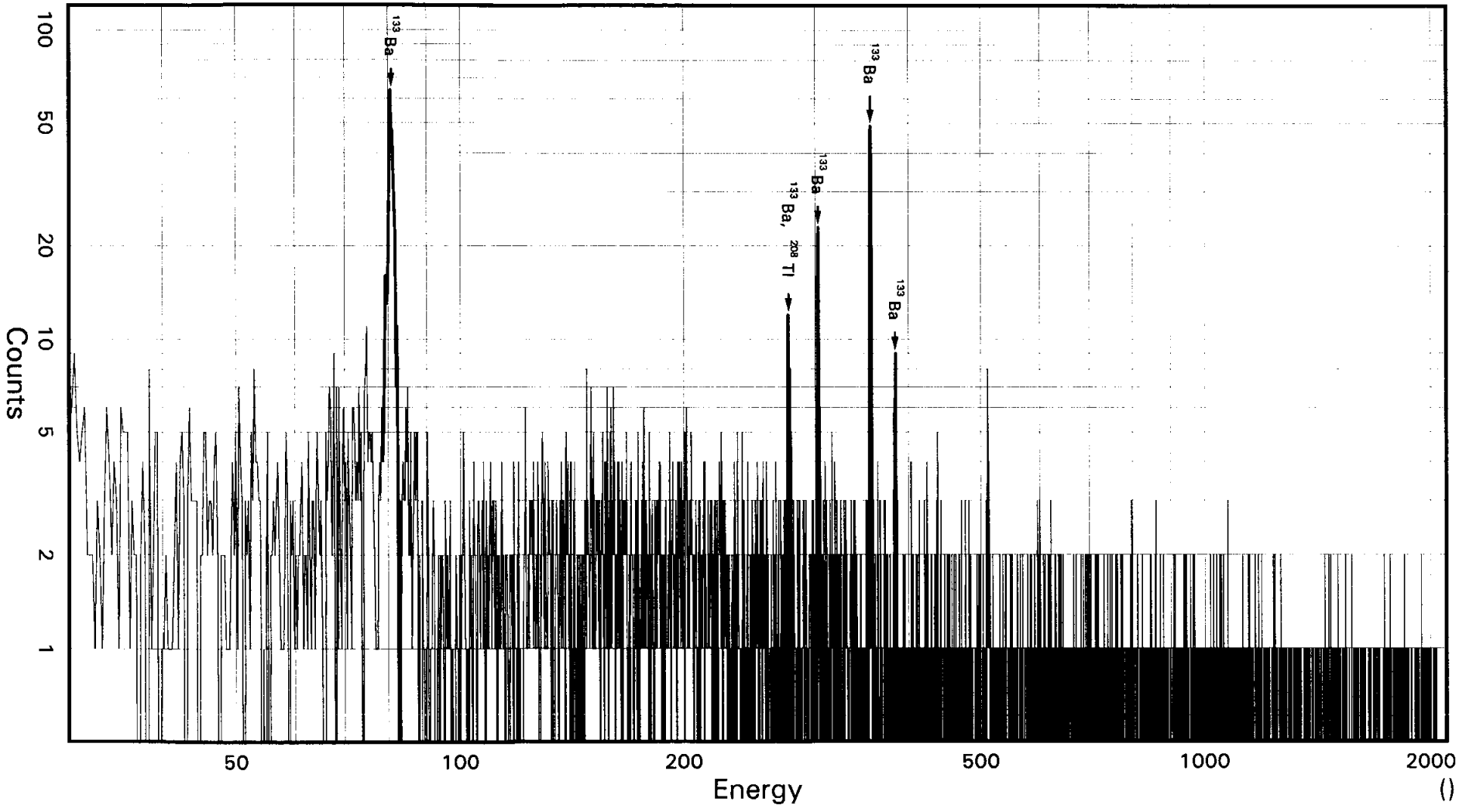
STL Richland WA.

BA133

Sample ID: H6A1V1AA

Detector ID: GER10 1

Batch ID: 6146445



Acquisition Start: 19-JUN-2006 15:39:05.48

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: 1.56759E+01

Slope: 2.46944E-01

Quadrature: 3.15282E-09

SAMPLE IDENTIFICATION: H6A1V1AA

CONFIGURATION ID: GER10:H6A1V1AA_190661539
TITLE : BA133
SAMPLE ID : H6A1V1AA

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 15:39:05
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:08.65
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.5676E+01 keV
ENERGY SLOPE: 2.4694E-01 keV/C
ENERGY Q COEFF: 3.1528E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.9758E-01 keV
FWHM SLOPE: 2.6348E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 16:09:23

```
Configuration     : $DISK1:[GER10.SAMPLE]H6A1V1AA_190661539.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:39:05
Sample ID         : H6A1V1AA             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.22   0.0%
Start energy      :    18.15             End energy       :  2038.85
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.90	326	57	1.12	264.11	255	18	1.81E-01	7.8	
2	0	276.41	44	15	1.47	1055.82	1047	15	2.44E-02	24.4	
3	0	302.83	115	9	1.05	1162.81	1154	17	6.36E-02	11.0	
4	0	356.08	314	10	1.54	1378.43	1370	19	1.74E-01	6.1	
5	0	383.87	46	4	1.28	1490.97	1483	15	2.57E-02	17.3	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 16:09:23

Configuration : $DISK1:[GER10.SAMPLE]H6A1V1AA_190661539.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:39:05
Sample ID : H6A1V1AA Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.22 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	326	33.00	2.399E+00	1.372E+03	1.374E+03	9.51
	276.40	44	6.90	2.578E+00	8.244E+02	8.253E+02	24.99
	302.84	115	17.80	2.582E+00	8.305E+02	8.315E+02	12.26
	356.00	314	62.05*	2.584E+00	6.518E+02	6.525E+02	8.15
	383.85	46	8.70	2.584E+00	6.849E+02	6.856E+02	18.15

Flag: "*" = Keyline

Sample ID : H6A1V1AA
Acquisition date : 19-JUN-2006 15:39:05

None

Flags: "T" = Tentatively associated

Sample ID : H6A1V1AA
Acquisition date : 19-JUN-2006 15:39:05

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	8.365E+02	24.99	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 16:09:25

Configuration : $DISK1:[GER10.SAMPLE]H6A1V1AA_190661539.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 15:39:05
Sample ID : H6A1V1AA Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.22 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.525E+02	5.319E+01	4.153E+01	8.307E-01	15.710

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	9.417E+01		5.555E+01	2.528E+02	5.070E+00	0.373
NA-22	-2.844E+00		3.915E+00	1.474E+01	3.115E-01	-0.193
K-40	4.314E+01		4.981E+01	2.471E+02	5.287E+00	0.175
SC-46	7.122E+00		3.766E+00	2.000E+01	4.183E-01	0.356
CR-51	-2.922E+01		1.025E+02	3.675E+02	7.352E+00	-0.080
MN-54	1.289E+00		4.462E+00	1.889E+01	3.873E-01	0.068
CO-57	2.610E+01		9.866E+01	3.609E+02	7.446E+00	0.072
CO-58	2.817E+00		3.994E+00	1.848E+01	3.782E-01	0.152
FE-59	-2.450E+00		5.790E+00	2.434E+01	5.082E-01	-0.101
CO-60	-2.916E-01		3.368E+00	1.451E+01	3.078E-01	-0.020
ZN-65	-7.862E+00		7.072E+00	2.509E+01	5.244E-01	-0.313
SE-75	-4.719E+00		1.191E+01	4.365E+01	8.756E-01	-0.108
SR-85	-1.919E+01		1.059E+01	3.387E+01	6.805E-01	-0.566
Y-88	-3.075E+00		3.023E+00	1.088E+01	2.385E-01	-0.283
NB-94	-2.047E+00		4.352E+00	1.675E+01	3.441E-01	-0.122
NB-95	8.853E-02		4.681E+00	1.951E+01	3.980E-01	0.005
TC-95M	-5.527E+00		1.764E+01	6.309E+01	1.275E+00	-0.088
ZR-95	-2.985E+00		9.675E+00	3.749E+01	7.644E-01	-0.080
ZRNB-95	1.675E-01		8.857E+00	3.691E+01	7.531E-01	0.005
MO-99	4.647E+01		5.389E+01	2.034E+02	4.190E+00	0.228
RH-101	-2.075E+01		1.540E+01	5.445E+01	1.102E+00	-0.381
RH-102M	-3.025E+00		6.050E+00	2.246E+01	4.505E-01	-0.135
RU-103	8.156E+00		6.310E+00	2.828E+01	5.677E-01	0.288
RU-106DA	-5.145E+01		5.999E+01	2.102E+02	4.249E+00	-0.245
AG-108M	-1.090E+01		8.022E+00	2.697E+01	5.401E-01	-0.404
AG-110M	3.298E+00		6.468E+00	2.770E+01	5.698E-01	0.119
SN-113DA	1.690E+00		8.207E+00	3.352E+01	6.706E-01	0.050

Sample ID : H6A1V1AA Acquisition date : 19-JUN-2006 15:39:05

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-3.462E+00		6.207E+00	2.265E+01	4.572E-01	-0.153
SB-125	2.997E+01		2.342E+01	9.794E+01	1.961E+00	0.306
SN-126DA	1.689E+00		4.969E+00	2.074E+01	4.203E-01	0.081
I-131	1.499E+01		1.325E+01	5.598E+01	1.120E+00	0.268
CS-134	7.810E+00		7.449E+00	3.121E+01	6.381E-01	0.250
CS-137DA	-4.079E+00		5.398E+00	2.013E+01	4.078E-01	-0.203
LA-138	6.198E+00		3.594E+00	2.222E+01	4.747E-01	0.279
CE-139	1.358E+01		1.217E+01	4.801E+01	9.793E-01	0.283
BA-140	-1.086E+01		2.802E+01	1.065E+02	2.142E+00	-0.102
BALA-140	-7.988E+00		8.078E+00	2.994E+01	6.464E-01	-0.267
LA-140	-3.659E+01		3.700E+01	1.372E+02	2.961E+00	-0.267
CE-141	-5.832E+01		2.245E+01	6.483E+01	1.332E+00	-0.900
CE-144	2.757E+01		9.151E+01	3.378E+02	6.981E+00	0.082
CEPR-144	5.716E+01		1.832E+02	6.766E+02	1.398E+01	0.084
PM-144	8.742E+00		6.787E+00	2.835E+01	5.729E-01	0.308
PM-146	-6.091E+00		9.813E+00	3.568E+01	7.149E-01	-0.171
EU-152	-6.734E+00		2.518E+01	9.264E+01	1.853E+00	-0.073
EU-154	-7.979E+00		1.099E+01	4.136E+01	8.741E-01	-0.193
EU-155	3.557E+01		4.568E+01	1.756E+02	3.693E+00	0.203
HF-181	8.420E+00		7.893E+00	3.347E+01	6.716E-01	0.252
BI-207	1.210E+00		3.567E+00	1.597E+01	3.218E-01	0.076
TL-208	3.836E+00		6.011E+00	2.536E+01	5.113E-01	0.151
BI-210M	-5.522E+00		1.470E+01	5.359E+01	1.075E+00	-0.103
BI-212	-5.652E+01		6.528E+01	2.395E+02	7.319E+00	-0.236
PB-212	-1.576E+01		1.747E+01	6.089E+01	1.225E+00	-0.259
BI-214	2.146E+01		1.137E+01	5.256E+01	1.061E+00	0.408
PB-214	4.729E+01		2.368E+01	8.985E+01	1.797E+00	0.526
RA-223	-3.053E+01		5.976E+01	2.134E+02	4.280E+00	-0.143
RA-224DA	-1.586E+01		1.757E+01	6.127E+01	1.232E+00	-0.259
RA-226DA	2.146E+01		1.137E+01	5.256E+01	1.061E+00	0.408
AC-227DA	2.545E+01		7.380E+01	2.806E+02	5.644E+00	0.091
AC-228	3.984E+00		1.753E+01	7.200E+01	1.484E+00	0.055
RA-228DA	3.992E+00		1.757E+01	7.215E+01	1.487E+00	0.055
TH-228DA	1.074E+01		1.683E+01	7.101E+01	1.432E+00	0.151
TH-232DA	2.787E+01		6.152E+01	2.358E+02	4.716E+00	0.118
TH-234DA	-5.721E+02		5.284E+02	1.909E+03	3.960E+01	-0.300
U-234DA	3.140E+01		4.256E+01	1.652E+02	3.308E+00	0.190
U-235HP	-6.276E+01		8.252E+01	2.847E+02	5.856E+00	-0.220
NP-237DA	-2.464E+01		2.315E+01	7.829E+01	1.567E+00	-0.315
U-238DA	4.729E+01		2.368E+01	8.985E+01	1.797E+00	0.526
U-238DHP	1.377E+02		2.960E+02	1.112E+03	2.460E+01	0.124
AM-241HP	-1.010E+01		3.080E+01	1.111E+02	2.477E+00	-0.091

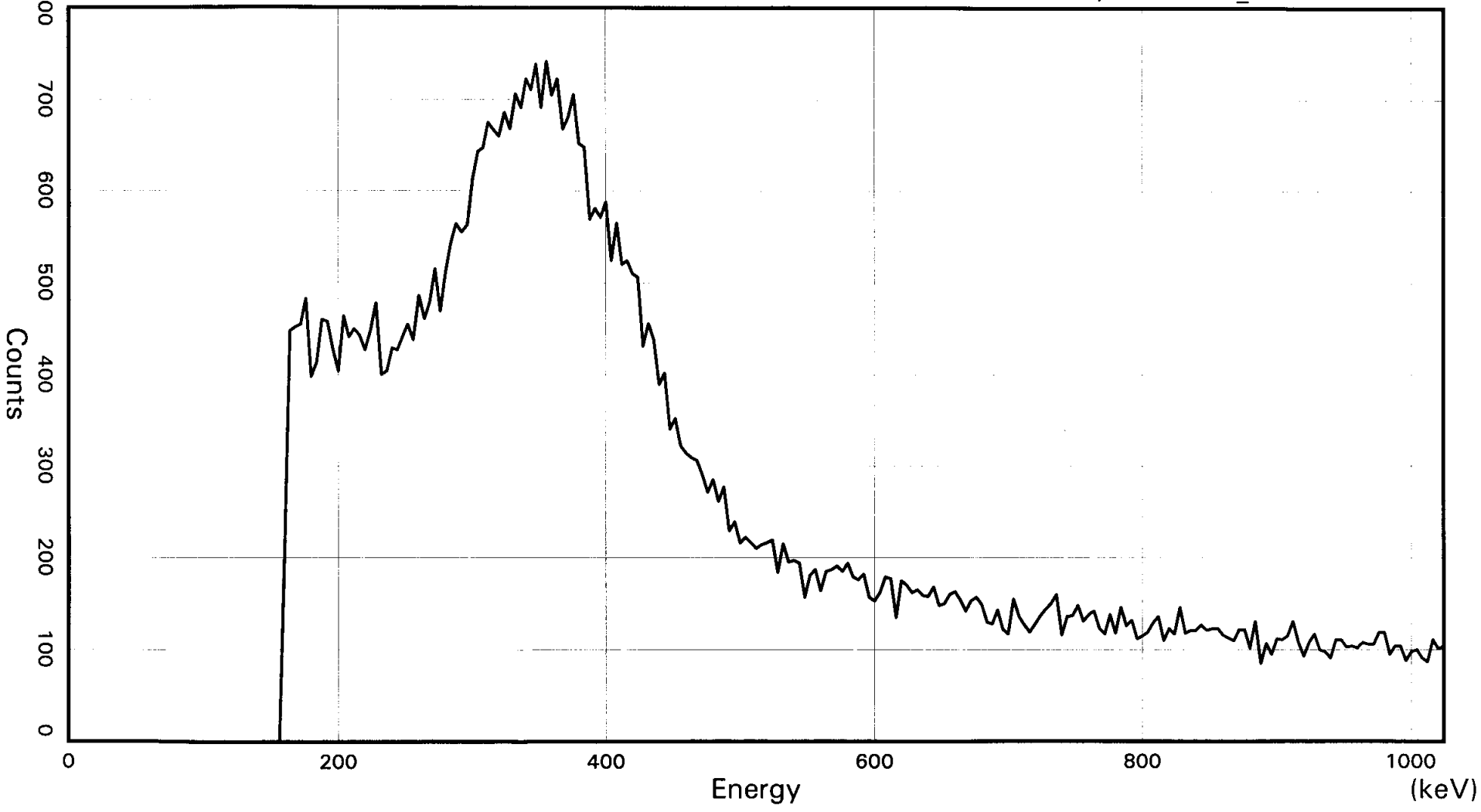
STL Richland WA.

BA133

Sample ID: H6A1V1AC

Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start:	19-JUN-2006 15:38:58.06	Start Channel:	80
Preset Live Time:	0 00:30:00	End Channel:	113
Elapsed Live Time:	0 00:30:00	Iterations:	5
Weighting:	DERIVED	Gain shift:	Iter

SAMPLE IDENTIFICATION: H6A1V1AC

CONFIGURATION ID: NAI1:H6A1V1AC_190661538
TITLE : BA133
SAMPLE ID : H6A1V1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 15:38:58
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 9-JUN-2006 12:00:00.00
CALIB DATE: 17-NOV-1993 10:39:59.60
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY:

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 0.0000E+00 keV
ENERGY SLOPE: 4.0000E+00 keV/C
ENERGY Q COEFF: 0.0000E+00 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: -.2302E+02 keV
FWHM SLOPE: 5.7163E+00 sqr keV
ITERATIONS: 5
GAUSSIAN SENSITIVITY: 35.00 %

ABUNDANCE LIMIT: 75.00 %
ENERGY TOLERANCE: 20.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]BA133.NLB

VMS NAI Report V1.2 Generated 19-JUN-2006 16:09:04

Configuration	: RDND06$DKA100:[NAI1.SAMPLE]H6A1V1AC_190661538.CNF;1		
Analyses by	: NAI V3.0		
Sample title	: BA133		
Sample date	: 9-JUN-2006 12:00:00	Acquisition date	: 19-JUN-2006 15:38:58
Sample ID	: H6A1V1AC	Sample quantity	: 1.0000 sampl
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.65 0.0%
Sample Multiplier	: 1.00	Rejection Coeff.	: 0.00
Gain shift type	: ITER	Threshold Shift	: No
Weighting type	: DERIVED	Calculated counts	: No
Iterations	: 5		

NAI Residuals Report

Ratio of Residuals Over Standard Deviation Per Channel

80:	5.0	5.2	3.8	4.7	4.0	4.2	3.5	3.5
88:	0.8	2.6	0.2	0.4	-0.3	-1.4	1.5	-0.8
96:	-1.1	-4.5	-2.8	-3.2	-3.7	-3.8	-2.1	-2.8
104:	-3.4	-4.1	-3.4	-5.2	-3.5	-4.0	-5.4	-4.4
112:	-5.8	-5.1						

List of Suspicious Channels

81	82	83	84	85	86

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	9.62E+00	0.00E+00	1.03E+00
2	3.21E+00	0.00E+00	1.06E+00
3	1.31E+00	0.00E+00	1.08E+00
4	8.56E-01	0.00E+00	1.08E+00

Sample ID : H6A1V1AC Acquisition date : 19-JUN-2006 15:38:58

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	694.	8.31

Total Activity :	694.	